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## Visitor Management Plan for the Complex of AL -Ain National Museum and the Eastern Fort (World Heritage Site)

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### ABSTRACT

*This paper covers the rehabilitation of the AL Ain National Museum, Eastern Fort and the Oasis world heritage sites by making them more accessible to the public. Currently, there are approximately 800,000 visitors each year to the site, but by 2030 there will be as many as 1.3 million visitors who are estimated to visit Al Ain world heritage site.*

*The visitor management plan includes re-develop the original museum and will dedicate this museum to Sheikh Zayed bin Sultan Al Nahyan in 1969 covering the life of Sheikh Zayed bin Sultan Al Nahyan who ruled the Emirate of Abu Dhabi for more than 30 years, from 1966 until 2004, will add a new Museum display the history of Al Ain city, and make the oasis accessible. AL Ain's cultural sites are grouped under four main headings: Hafit Assemblage, Hili Assemblage, Bidaa Bint Saud Assemblage, and Oasis.*

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**KEYWORDS:** *Visitor Management Plan, AL-Ain National Museum, Al-Ain Oasis United Arab Emirates - preventive conservation - preservation..*

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### INDRUDUCTION

Al Ain is a city in the Eastern Region of the Emirate Abu Dhabi, on the United Arab Emirates' border with Oman. Al Ain's cultural sites are currently the only world heritage site in the United Arab Emirates, were inscribed on the UNESCO World Heritage list in June 2011, and have been grouped under four main headings: Hafit Assemblage, Hili Assemblage, Bidaa Bint Saud, Oases and it is divided into six Oases.

The complex is significant cultural landmarks that attract a large number of visitors each year. However, several challenges and issues currently hinder the effective management and preservation of these historical sites. The absence of a comprehensive management plan has led to the following problems:

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**Inadequate Maintenance and Conservation:** The lack of a systematic approach to maintenance and conservation has resulted in the deterioration of the AL-Ain National Museum and the Eastern Fort. This includes issues such as structural damage, fading artwork, weathering of exteriors, and erosion of historical artifacts. Without proper attention, these problems will continue to worsen, jeopardizing the integrity and authenticity of the sites.

**Insufficient Visitor Management:** The current visitor management system at the AL-Ain National Museum and the Eastern Fort is not adequately designed to accommodate the growing number of visitors. This has led to overcrowding, long queues, and a subpar visitor experience. Additionally, the lack of clear signage and interpretive materials hampers visitor understanding and engagement with the cultural significance of the sites.

**Limited Educational Programs:** The AL-Ain National Museum and the Eastern Fort have great potential as educational resources for students and researchers. However, the existing educational programs and resources are limited in scope and effectiveness. There is a need for the development of comprehensive and engaging educational initiatives, including guided tours, workshops, and interactive exhibits, to enhance learning opportunities and promote a deeper understanding of the region's history and heritage.

**Inefficient Financial Management:** The current financial management practices for the AL-Ain National Museum and the Eastern Fort are not optimized for sustainability and growth. There is a lack of transparent budgeting, fundraising efforts, and revenue-generating strategies. As a result, the sites heavily rely on government funding, which may not be sufficient to meet their operational and developmental needs in the long term.

**Inadequate Community Engagement:** The AL-Ain National Museum and the Eastern Fort are integral parts of the local community's cultural heritage. However, there is a lack of meaningful community engagement initiatives and collaborations. This hinders the involvement of local residents in the preservation, promotion, and utilization of these historical sites, leading to a missed opportunity for community-driven development and social cohesion.

To ensure the long-term sustainability and effective management of the AL-Ain National Museum and the Eastern Fort, a comprehensive management plan must be developed. This plan should address the aforementioned challenges and outline strategic objectives, actionable steps, and measurable outcomes to preserve and enhance these cultural landmarks while fostering a positive visitor experience, expanding educational programs, improving financial sustainability, and strengthening community involvement.

### **Historical background**

Al Ain is widely observed as the cultural center of the Emirate of Abu Dhabi, as well as the encompassing nation of the United Arab Emirates. (*Hellyer P (2012), p45*)

Al Ain Oasis, formerly called Buraimi, means “spring” in Arabic. The area of Al Ain Oasis is about 1.5 square kilometers. In earlier times, forts and palm trees were the tallest things in the city, with almost all buildings being a single-storey mud building, or bedouin tents. (*Machado, 2009, P.82*). Al Ain region appears to have been a permanent settlement since the Neolithic period. Large scattering of flint tools was found in the nearby desert. From the Bronze Age, there are the Jebel Hafeet tombs, the Hili Cemetery, the Qatara Tomb, and the Iron Age villages in Rumaila and Qaran Bint Saud. Early Omani records indicate that the area was important at the beginning of the Islamic period, and archaeological remains testify to the early Abbasid period. (*Iddison P, 1998, p.22*). Until the late 1960s, Al Ain was a palm oasis passing

by a small resident Population controlled by semi-nomadic Bedouins from Baniyas Union. The Beni Yas had their main seat of power in the coastal settlements at Abu Dhabi, west of Al Ain and were the most important tribe in a group of oases in the Liwa area to the south west of Al Ain. A journey of 160 km from Al Ain to Abu Dhabi took at least three days by camels and could take two weeks for goods convoy. (*ChaoCT, Krueger RR 2007 p.42*).

### **The eastern fort (sultan fort)**

Recently, specifically in the late nineteenth and early twentieth centuries, a large number of forts of all sizes were created in Al Ain. In fact, the fertile oases of the region were extremely reassuring, hence the population's interest in defending them against the hostile tribes. Most of the ruined forts were restored to enjoy visitors. However, the direction of restoration is more like reconstruction than restoration. (<https://www.odyfolioemirates.com/en/al-ain/history>)



*Figure (1) old picture for Sultan fort*

The eastern fort (it is also known as Sultan fort) is associated with the development of the role of the princely Zayed family that reigned over Al Ain and Abu Dhabi region at the end of the 19th century and early 20th century. It was occupied by the son of Zayed I, Sheikh Sultan in 1910. And it houses Al Ain National Museum. (<https://www.icomos.org/en>)



*Figure (2) an overview for Sultan fort*

### **Al Ain National Museum**

Al Ain National Museum is located in the city of Al Ain in the United Arab Emirates. It is housed in the same compound as the Eastern fort. It is the oldest museum in the country; it was

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founded in 1969 under the guidance of Sheikh Zayed bin Sultan Al Nahyan.

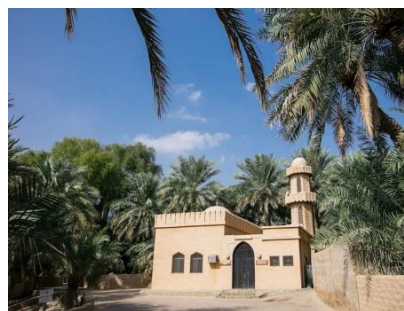
A temporary exhibition was displayed in the Eastern Fort during 1969–70 while the purpose-built museum was constructed. The museum was opened on 2 November 1971, before the union of United Arab Emirates, by His Highness Sheikh Tahnoon Bin Mohammed Al Nahyan, the Ruler's Representative in the Eastern Region. The museum is divided into three main sections, the Department of Anthropology, the Department of Archeology and Gifts with a separate section for the Afalaj system. (Al Ain City guide, 2012)



**Figure (3) Al Ain National Museum**

### **The Oasis**

The Al Ain Oasis, located in the city of Al Ain within the Emirate of Abu Dhabi, United Arab Emirates, is a prominent cultural and ecological site. Here's a more detailed breakdown: The Oasis is centrally located in Al Ain, in the Eastern Region of Abu Dhabi, Specifically situated in the Al-Mutawa'a District, it lies east of the Al-Jahili District. It spans approximately 1,200 hectares (nearly 3,000 acres), making it the largest oasis in Al Ain. The oasis is home to over 147,000 date palms, featuring up to 100 different varieties. It offers a serene, green landscape with shaded pathways, providing a sharp contrast to the surrounding desert.



**Figure (4) Al Ain Oasis**

Al Ain Oasis is part of the UNESCO Cultural Sites of Al Ain, highlighting its historical importance. It preserves a way of life and culture that has existed for thousands of years, showcasing traditional methods of agriculture and land use. The oasis utilizes a traditional falaj irrigation system, an ancient technique for water management in arid regions. This system includes a network of underground and surface channels that bring water from the mountains

to the oasis.

### Boundaries of the complex:

Al Ain oasis is in the east-central part of the modern city, in the Central District

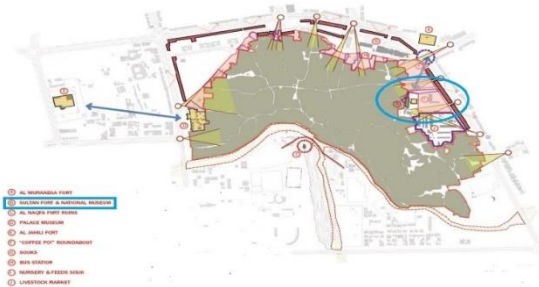


Figure (5) Boundaries of the complex



Figure (6) Boundaries of the complex

## Evaluation & Site Assessment

### The Current situation:



1- Entrance

2- The Eastern fort

3- Al- Ain National Museum

Various factors do continue to affect the complex:

#### 1 Al Ain National Museum

- There isn't link between the eastern fort, the national museum and the surrounding Oasis
- Oasis is not accessible to the public
- Walls are too high to allow views into plots
- Paths are not inviting
- Large dusty open lots adjacent to oasis
- Entries are often concealed or are far from street edges
- Wadi is a physical & visual obstacle in current state
- Livestock market inappropriately close to museum
- Physical links to the eastern fort & the national museum are poor

## **2 The Eastern fort current situation**

- Wind and water erosion acting on the fragile earthen materials (mud brick) of the fort and walls in the oases in combination with deficient repairs and maintenance;
- Increased use and visitation potentially exceeding their carrying capacity.
- Entries are often concealed or are far from street edges
- Visual and physical links between forts are poor
- Physical links to the eastern fort & the national museum are poor
- The lighting system is very poor

## **3 The Oasis**

The oasis is neglected and is not displayed within the interpretative infrastructure; just small unsuitable sign stand that don't reflect the importance of these sites. The oasis is the most important sites that should be highlighted by a very good and obvious interpretation and presentation to elaborate the importance of them in the history of the site.

World Heritage sites belong to all the peoples of the world. From this fact, each State Party to the Convention should recognize its primary duty to ensure the identification, protection, conservation and transmission to future generations of the cultural and natural heritage situated on its territory. The choice of what to preserve, how to preserve it, and how it is to be presented to the public are all elements of site Interpretation and Presentation are essential components of heritage conservation efforts and means of enhancing public appreciation and understanding of cultural heritage sites.

In recognizing that interpretation and presentation are part of the overall process of cultural heritage conservation and management, this report seeks to present the evaluation and assessment for the site generally and comprehensively to determine whether the Outstanding Universal Value of the World Heritage properties have been preserved. This report consists of main general points containing detailed sub-points which evaluate the entire site elements comprehensively, and at the end of each sub-point there are recommendations that propose means of overcoming the problems

## **1- Services infrastructure**

### **Constructions**

The master plan of the site consists of scattered and dispersed constructions which create complications in means of operation, security, connection, accessibility etc. All the constructions on the site need rearrangement to enable an efficient site circulation and structure functionality which will eventually ensure the visitors' good experience during the visit.

### **Parking**

The location of the parking is too far from the drop off point near the visitor center. The parking lot is not planned; this may lead to disorientation of the buses and confusion of the arrival and departure location from the site. Relocate the position of the parking to a more suitable place to the drop off point near the visitor center. Design the plan of the parking with consideration of the design standards in accordance to the buses' dimensions and circulation regulations.

### **The site approaches**

According to the current location of the parking, the visitor arrives to the site through walking in a rear walkway to reach the visitor center then the gates to the site. This approach is unsuitable and doesn't give the proper perception of the importance of this unique site. The approach to the site must have a strong impact on the visitor to feel the importance of the site,

beginning from the moment and the place where the visitor arrives to the site approach through the visitor center and the gates.

### **Public Services**

*There is a lack different service on the site like:*

Gathering and refreshment points alongside the walkways, rest rooms, food and beverage services, ATM machines, phone chargers' poles.... etc. Also there is lack in some touristic services like: info offices, site tour packages, lockers ...etc. It is essential to provide all the needed services to promote the site visit to the visitors. These services will not also enrich the visit experience, but it will also reflect the importance of the site and thus attract more tourists.

### **Bazaars**

The linearity of the bazaars makes it hard to the visitor to walk the whole distances to reach all the bazaars. The distribution of the bazaars and the landscape plots in front of it, and the rope barrier which blocks the access to the bazaars from the sidewalk make complications in circulation and the accessibility from and to the bazaars. It is recommended to redesign the bazaars in a way that suits its function and to makes it easy for the visitors to access from and to it.

## **2. Interpretative infrastructure.**

### **Visitor Center\ Exhibition**

The visitor center lacks many of the design potentials and the elements which needed to play its role in preparing the visitor to visit the site. The content in the visitor center is very poor and doesn't present the proper interpretation for such an important site. Also, the space lacks the proper ventilation and lighting for its area.

The visitor center is considered one of the most important elements in the interpretative infrastructure, which prepares the visitors for their visit and exploration of the site. Therefore, it is important to make good design features with different mediums of presentation which will help the visitor to be informed about the site and its history in different languages and with suitable ways for a big range of kinds and ages of visitors.

### **Information System**

There is lack in existence of the information system in its different applications in the site locations. This disturbs the orientation and the circulation of the visitor. Also, the existing information system applications are poor quality in everything like: design, materials, and fabrication. They also stand in unsuitable positions according to their function. Accordingly, the whole information system is not informative. It is important to redesign and reposition the information system with its different applications like: signs, way finding, door signage, labels, leaflets, smart applications, interpretation panels.... etc. and ensure that it is doing its function in guiding and informing the visitors.

## **3. Mobility**

### **Main Access Road**

The only main access road to the site is not used and blocked with barriers so that the vehicles drop off the visitors in the parking which lengthens the walking distance until the visitor center and the other services. By using the access road and allowing the vehicles to reach the drop off point where the visitors could go directly to the visitor center and the gates of the site.

### **Walking distances\ Pedestrian paths**

After passing the entrance gate and to reach the site area there are multiple paths creating confusion and disorientation. The location of the entrance gate causes unequal paths distances to reach the area of the fort, the national museum and the oasis. There are no signs showing the different distances of which the visitor may choose which direction to walk in.

It is recommended to relocate the gates to make the paths which lead to the site equal in distance. Or putting signs and way finding illustrate the different distances and provide modes of transport like bicycles and golf carts, where then the visitor is free to choose what is suitable for him to reach the site.

### **Disabled accessibility**

The urban design of the site doesn't allow easy accessibility to the disabled visitors. It is important to follow the main design guidelines to make the urban design more appropriate for the disabled access.

## **Built Environment**

### **Architectural Style**

The current standing architectural styles are not unified in terms of materials and types of constructions. It is recommended to redesign the constructions with consistent architectural styles and materials as a whole to reflect a unique architectural language inspired from the site components and history.

### **Landscape**

There are many problems in the site landscape; there is no consistency between the different materials used on the site landscape. The vegetation is also neglected which led to an unsuitable look for such an important and rich site. A landscape redesign is suggested using consistent materials matching to the site that doesn't affect the functionality of any of its components.

### **Urban Furniture**

There is an obvious lack of urban furniture elements with their different types and uses. The current urban furniture is either damaged or not functional in many ways: bad design, inconsistency and rough fabrication materials. There are some shades made from wooden battens which practically don't shade where they are positioned. Redesign all the urban furniture and redistribute all its elements: seats, benches, shades, trash cans, sidewalk lighting, barriers, guard kiosks...etc. and make sure of the functionality of every element in its position.

Through the previous evaluation and assessment study of the site's-built environment, its interpretation and facilities infrastructure, the mobility and the circulation in site, we were able to appoint the aspects of inefficiency and the lacks in facilities and interpretations. These two aspects are used as a design brief to create a conceptual design that proposes solutions to solve, and overcome these inefficiencies and lacks. The proposed design divides the site into different zones, in reference to their types and their required facilities, services and interpretations in each. The proposed design and its elements aim to provide a better visiting experience and to create and joyful and educating visit.

The proposed design covers the complete re-master planning of the site, the redesign of circulation and mobility, the redesign of the interpretive infrastructure in means of facilities and site presentation, the redesign of the visitor center introductory exhibition and the overall site information system including signage and way findings as well as the set of necessary urban furniture such as seats, benches, shades, garbage cans etc. The complex is envisioned as



## Visitor Management Plan for the Complex of AL -Ain National Museum and the Eastern Fort

a cultural and natural complex because it houses the eastern fort, the national museum and the oasis, it is listed in the world heritage site so we have to protect it from factors effect of deeper social and economic changes. The edges of the oasis are mysteriously defined at the present time, allowing evolution to encroach upon them. The scheme proposes a series of well-defined circles that surround the oasis to define its edge strongly and prevent infringement.

Depending on the current narrow space of the National Museum, it is necessary to extend it with new building (extension museum) respecting the edges of the nearby oasis and linked with the eastern fort and the Oasis as one complex has the same visitor route.



Figure (7) City Level Site Plan (the eastern fort, the Oasis, the national museum and its extension)

## MASTER PLANNING OF THE SITE

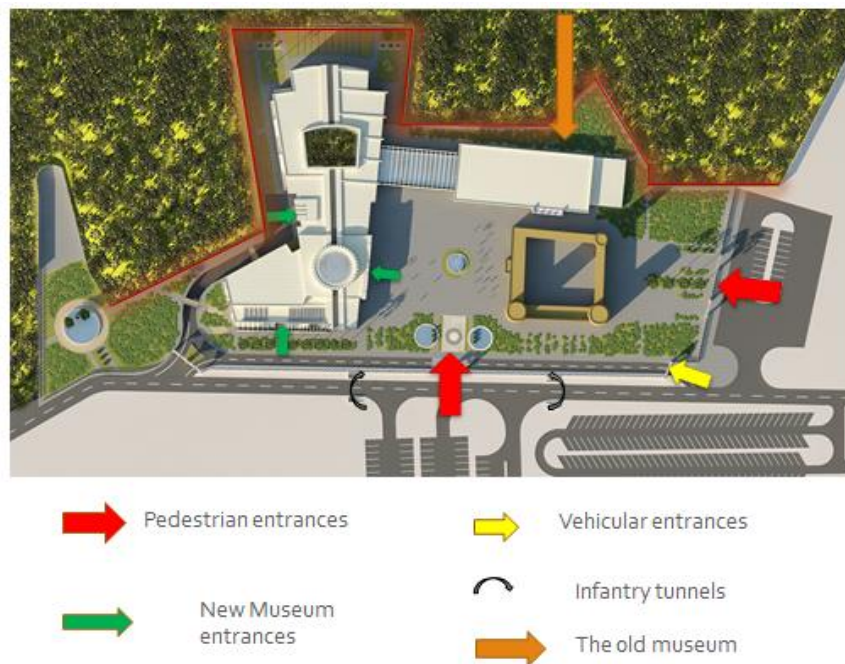


Figure (8) Suggested planning for the site

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## Improving Access in the External Environment

### 1 Way finding and signage

Way finding is the instinctive way people use their senses and cognitive powers to navigate from place to place. Familiarity with the historic order of the manmade environment is often deeply embedded in people and this knowledge is used intuitively when finding one's way around a new place for the first time. Finding one's way easily around the historic environment requires clear, direct routes and the provision of well-designed and located signs. In recent years, technological solutions to way finding have greatly improved. Global Positioning Systems (GPS), Bluetooth technology and mobile phone applications have been developed specifically to assist all users to orient themselves and to navigate from place to place and these may help reduce dependence on physical signs, audible information and guidance paths. These technologies have the advantage in historic sites of having little or no physical impact on the place (de Bruijn, J.2019).



*Figure (9) suggested access road*



*Figure (10) suggested drop off area*

### 2-Drop off area

## Improving Access in and Around Buildings

### 1-Arrival and car parking

The arrival point to a historic building or place is where the visitor's first impression is formed. Arrival should be an easy and dignified experience. Ideally, everyone should be able to access the principal entrance. Where this may not be possible, alternative entrances which allow comfortable and independent access should be provided and clearly signed. Generally, the location of designated accessible car parking and set-down areas should be as close to the building or site entrance as possible. Where this is not possible, the provision of set-down areas which minimize travel distance to the entrance, or some form of shuttle service between the parking area and the entrance, may be necessary. It is also important to ensure that any access controls to parking areas are easy to operate and in an accessible location. Careful consideration is needed where car parking is to be provided within a historic setting (Chen, C. 2008).

In addition to the potential impact of large paved areas on the historic environment, the need for lighting can have a significant effect on a sensitive historic garden or landscape and on the setting and appreciation of buildings. In areas where the predominant ground surface is loose, such as gravel surfaces in rural areas or the grounds of historic houses, a firm surface should be provided for accessible routes where this is possible to achieve. Designated bicycle

parking may be necessary to avoid the informal use of railings and gates for securing bicycles as they form an obstacle as well as damaging historic fabric. Where designated parking bays and set down areas are provided, there should be sufficient space to the side and rear to allow for transfer to and from wheelchairs in accordance with good practice standards. Routes from the designated spaces and set-down areas should, where practicable, be well lit, accessible and direct. In historic places where it is desirable to minimize the visual impacts of surface markings and linings, these can be effectively achieved using narrower widths of markings and more muted color tones than are standard (Parry, R.2018).

## 2- Accessible routes between the eastern fort, the old museum, the new museum, and the oasis.

Routes within a site should be identified which suit the widest possible variety of users. These may be wheelchair users, people with buggies, people who cannot walk very far or people who are blind or have vision impairment. For some it may be the shortest route; for others it may be the route with the shallowest gradient or the best sensorial information (Filová, N.2022).

## Golf Cars



Figure (11) suggested Golf Carts

## Bikes



Figure (12) Bike Sharing

## Walk Ways



Figure (13) Pedestrian Walkways

## Disabled Access

Designing a disabled access for the Al Ain National Museum and the eastern fort, involves several key elements to ensure accessibility and comfort for visitors with disabilities. Here's a conceptual design:

- 1. Ramp Installation:** A gentle sloping ramp should be installed at the entrance. This ramp needs to have a non-slip surface, handrails on both sides, and a slope gentle enough to be navigable by wheelchairs. The ideal slope is 1:12 (for every inch of vertical rise, there should be at least 12 inches of ramp run).



Figure (14) suggested A gentle sloping ramp

- 2. Automatic Doors:** The entrance should have automatic doors with sensors, wide enough to comfortably accommodate wheelchairs .

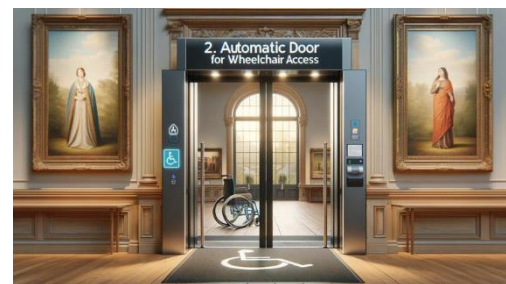
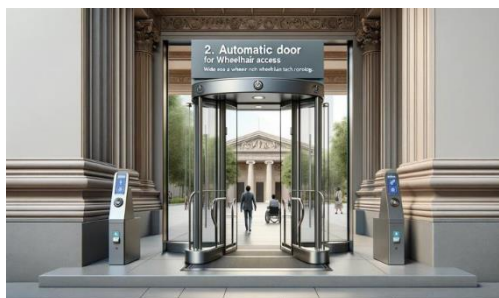


Figure (15) Automatic Door for Wheelchair Access

**3. Tactile Guidance System:** For visitors with visual impairments, a tactile guidance system should be installed, using textured floor markings leading from the entrance to key areas within the museum.

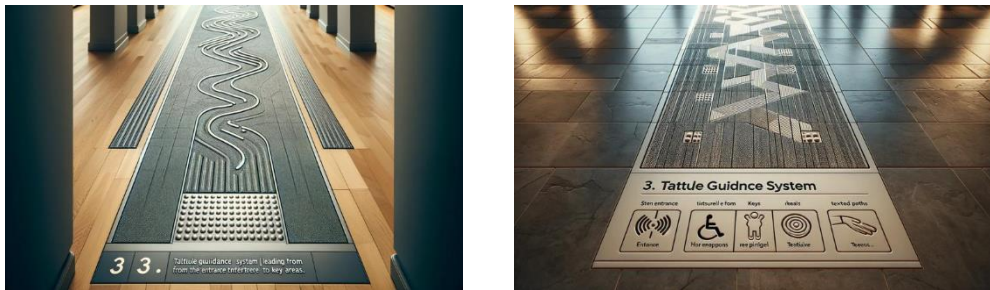


Figure (16) Tactile Guidance System

**4. Accessible Information Desks:** Lowered sections of information desks should be available, allowing wheelchair users to easily interact with staff.



Figure (17) Accessible Information Desk

**5. Accessible Restrooms:** Ensure that there are restrooms designed for wheelchair users, with enough space for maneuvering, handrails, and accessible sinks and toilet facilities.



Figure (18) Accessible Restroom.

**6. Elevators and Lifts:** If the museum has multiple floors, providing elevators or platform lifts is essential. These should have audio announcements for each floor and braille buttons for visually impaired visitors.

**7. Seating Areas:** Regularly spaced seating areas should be available throughout the museum for visitors who cannot stand for long periods.

**8. Emergency Systems:** Emergency systems (alarms, announcements) should be both audible and visual to cater to visitors with hearing or visual impairments.

**9. Signage:** Clear and large print signage, along with braille where appropriate, should be used throughout the museum.

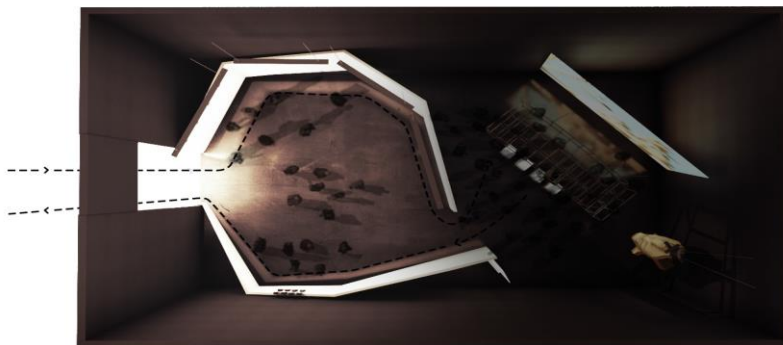
**10. Staff Training:** Staff should be trained in disability awareness and in how to assist visitors with various types of disabilities. This design aims to create an inclusive environment that respects the needs and dignity of all visitors, ensuring that everyone has equal access to the cultural and educational offerings of the Al Ain National Museum.

#### **4 Facilities (Visitor center -Bazaars — coffee shop and restaurant - Rest areas & refreshment points-gift and book shop)**

##### **VISITOR CENTER**

The visitor center is considered one of the most important elements in the interpretative infrastructure, which prepares the visitors to begin their site visit. Therefore, it is important to create a design capable of featuring the subject through suitable mediums that trigger visitors' attention and help them understand the site, its history and its context (Vareiro, L.2021). The curatorial approach of the exhibition is based on providing a clear historical introduction through a main timeline exhibit.

The timeline features in a chronological order a short brief about Sheikh Zayed bin Sultan Al Nahyan, his presence in Abu Dhabi, the construction of the Eastern fort and the National Museum, and the history of Al Ain cultural sites. In Addition to the timeline, a video projection documentary will focus on the history of Al Ain sites. At the end of the exhibition, visitors are invited to pick up a leaflet map and start their exploration journey on the site.



*Figure (19) suggested Exhibition Plan of the visitor center*



*Figure (20) suggested Exhibition Plan of the visitor center.*



*Figure (21) suggested vaster center*

### **REST AREAS & REFRESHMENT POINTS**

**Strategic Location:** Rest areas should be strategically located throughout the site, ensuring that they are easily accessible but not intrusive to the historical or cultural elements of the site. They should be placed at regular intervals, especially in larger sites.

**Seating:** Comfortable seating is crucial. Benches, chairs, and shaded areas should be provided for visitors to sit and relax. Seating should also be available in both open and enclosed spaces to accommodate different weather conditions (Ganucci Cancellieri, 2018).

**Shade and Shelter:** Providing shade is essential, especially in areas with a hot climate. Shelters or pavilions can also be useful in protecting visitors from rain or other weather elements (Marty, P. 2008).

**Refreshment Points:** Food and beverage kiosks or cafes should offer a variety of options, including local cuisine that reflects the heritage of the area. It's important to ensure quality and hygiene standards (Basics, B. 2013).

**Water Fountains:** Access to drinking water is critical. Water fountains or water refill stations should be available for visitors, especially in hot climates (Bulut, Y., 2007).

**Waste Bins:** Proper waste management should be in place, with bins for general waste and recycling. This helps in maintaining the cleanliness and sustainability of the heritage site (Merlino, S. 2022).

**Information and Maps:** Rest areas can also include information panels, maps, and brochures to help visitors understand the heritage site and plan their visit more effectively (HOSOI, S. 2002).

**Toilet Facilities:** Clean and well-maintained toilet facilities should be available near rest areas. Depending on the size of the site, multiple toilet facilities might be necessary.

**Quiet Zones:** Some rest areas can be designated as quiet zones, where visitors can sit in silence and reflect on the cultural and historical significance of the site (Wiastuti, R. 2018).

**Integration with the Environment:** The design and layout of rest areas and refreshment points should be integrated with the environment and the heritage site's architecture. This ensures that they do not detract from the historical and cultural ambiance.

**Accessibility:** Rest areas and refreshment points should be accessible to all visitors, including those with disabilities. This includes providing ramps, accessible seating, and toilets (Gustafsson, C. 2017).

**Emergency Services:** Rest areas should have first-aid kits and emergency contact information available. Some larger sites might also benefit from having a first-aid station (Dadson, E.2012).



*Figure (22) suggested Refreshment Point*

### **bazaars (gift shop)**

Bazaars are a popular feature in many museums around the world. They offer a variety of benefits, both for museums and for visitors (Prentice, R.2001).

**Bazaars can help museums to:**

- Increase revenue:** Bazaars can generate revenue for museums through the sale of merchandise, food, and drinks.
- Attract more visitors:** Bazaars can make museums more appealing to visitors, especially families and children.
- Promote cultural awareness:** Bazaars can help to promote cultural awareness by showcasing the arts, crafts, and food of different cultures.



*Figure (23) Gift Shop display*

**Here are the images depicting sample gifts from Al Ain Museum and the eastern fort, each intended for a different audience and labeled accordingly:**

- 1. Gift for Men:** Showcasing items like traditional handicrafts or miniature replicas of historical artifacts.
- 2. Gift for Women:** Featuring elegant gifts such as traditional jewelry, textiles, or handicrafts.
- 3. Gift for Children:** Displaying colorful and engaging items like cultural games, traditional



candies, or T-shirts with cultural motifs. These images represent a range of culturally significant and appealing products available at the Al Ain Museum's gift shop, catering to men, women, and children ,



Figure (24) suggested T-shirt designs, heritage bags, designs for key chain and heritage cup

**Jewelry designs for the Al Ain Museum gift shop, each labeled to highlight its unique theme:**

- 1. Cultural Jewelry:** This piece features traditional Emiratis designs or symbols, crafted with elegance and cultural richness.
- 2. Heritage Jewelry:** Includes elements that reflect the historical and cultural significance of Al Ain, designed with artistic finesse.
- 3. Modern Jewelry:** Incorporates contemporary interpretations of Al Ain's culture and landscape, showcasing a blend of tradition and modernity.

These jewelry designs offer visitors a range of choices, from traditional and culturally significant to modern and stylish, making them perfect souvenirs or gifts from the Al Ain Museum

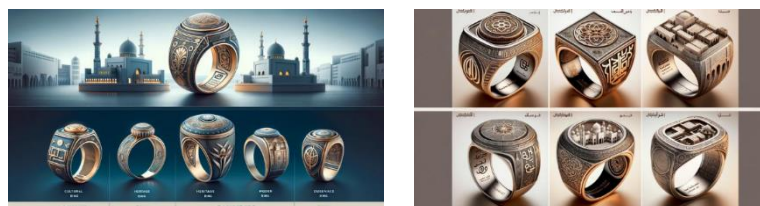


Figure (25) suggested jewelry designs

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### **Information panels and signage**

In developing a strategy for signage whether inside a building or in the external environment, it is necessary to identify the number of signs required, their purpose and where they should be located. Signage should be carefully integrated into the building or place ensuring that the result does not obstruct or damage an important aspect of the heritage whilst at the same time providing sufficient legible information to ensure that the environment is accessible. The design of the signs, the choice of location, fixing methodologies and lighting design all need careful consideration. Wall-mounted signs, should, where appropriate, be placed at eye level. In sensitive locations, the use of freestanding signs may avoid damage to historic fabric. Where the introduction of signage would result in an unacceptable impact on the character of the building or place, trained staff assistance may be an acceptable alternative (Mustikawati, T., 2018)

Where new signs are introduced, they should be carefully integrated with any surviving historic signage. They should follow the principles of well-ordered, logical circulation. Often the external urban environment is cluttered with signs, introduced in an ad-hoc manner, making it difficult for many people to understand and see and obstructing circulation. A well-planned and managed approach to signage and wayfinding in the public realm generally involves the coordination of several organizations. Generally, fewer signs are better, both in terms of accessibility and minimizing visual impact on the historic built environment. Ongoing monitoring and maintenance of signs in the public realm are also necessary.

Dual language signs should be made larger to accommodate the additional text rather than use unacceptably small font. Within a site, signs ideally indicate distances to key features or places and the presence of possible barriers along the route such as steps, the gradient of any slopes, and whether assistance is available. The types of signs that might be required depend on the use of the place and the extent of public access and may include name signs, directional signs, maps and emergency signs. In determining an approach to signage, consideration should be given to (Xia, J. 2009):

- The retention and reuse of any existing historic signs of note
- The consistency of sign design and its appropriateness to its location
- The avoidance of fixing to important features or finishes
- The avoidance of visual impact or obstruction of important features and
- The reversibility of the works

#### **For accessibility the following principles are important:**

- Signs should be located where they are clearly visible
- A person with low vision may be able to read a sign if they can approach it for close-up viewing
- Efforts should be made to locate signs where the reader does not obstruct circulation paths
- The readability of a sign is influenced by its position, size, viewing distance and colour contrast between the lettering and background. As the distance between the sign and reader increases, ideally so should the size of the lettering. Upper- and lower-case lettering are considered more legible than capitals alone
- Color and contrast of the lettering and the background should be considered and should be appropriate to the location. Reflection can be avoided by using matt surfaces
- Where illumination of a sign is needed, the light source should be shielded from the viewer to prevent glare.
- Text should be kept short and simple and use recognized symbols for standard features

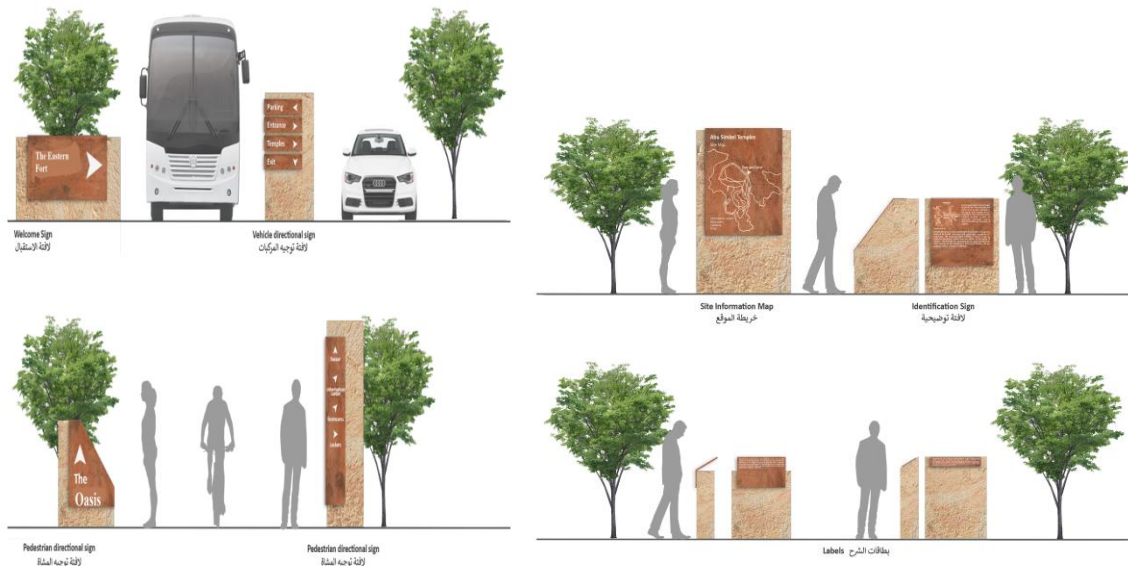


Figure (26) suggested signage

## INFORMATION SYSTEM

1. **Interactive Kiosks:** These can be placed at various points throughout the complex, allowing visitors to access information about the site, its history, and exhibitions (Burmistrov, I., 2015)
2. **Mobile Apps:** A mobile app for the complex could provide a rich source of information, including maps, audio guides, event calendars, and even augmented reality features to enhance the visitor experience (ÖZKUL, E.2019).
3. **Website:** A comprehensive website for the museum and fort complex can serve as a central information system, providing visitors with information on opening hours, ticket prices, current exhibitions, educational programs, and other relevant content (Kabassi, K.2017).
4. **Digital Signage:** This includes digital boards and screens displaying dynamic information such as current events, exhibits, or historical facts related to the site (Bailey-Ross, C.2017).
5. **Audio Guide Systems:** Handheld audio guide devices or mobile apps that provide narrated information and stories about various exhibits and areas within the complex (Anderson, S.2019)
6. **Wayfinding and Mapping Systems:** These help visitors to navigate through the complex by providing maps and directions. This can be in the form of physical maps, digital kiosks, or integrated into a mobile app (Othman, M.2022).
7. **Catalog and Archive Systems:** These are primarily for internal use by the museum staff. They help in cataloging, archiving, and managing the artifacts, documents, and other materials in the museum's collection (Kirchhoff, T.2008).

8. **Visitor Management System:** A system for handling ticket sales, visitor entry and exit, and collecting visitor data for analysis. This can be useful for managing crowd levels and enhancing the overall visitor experience (Centorrino, P.2021).
9. **Social Media:** Platforms like Facebook, Twitter, Instagram, etc., can act as informal information systems by keeping followers updated about events, exhibitions, and news related to the complex (Fletcher, A.2012).
10. **Educational Platforms:** Online educational platforms or e-learning systems that provide courses, lectures, or educational material related to the museum and its collection (Hsu, T. Y., 2006).

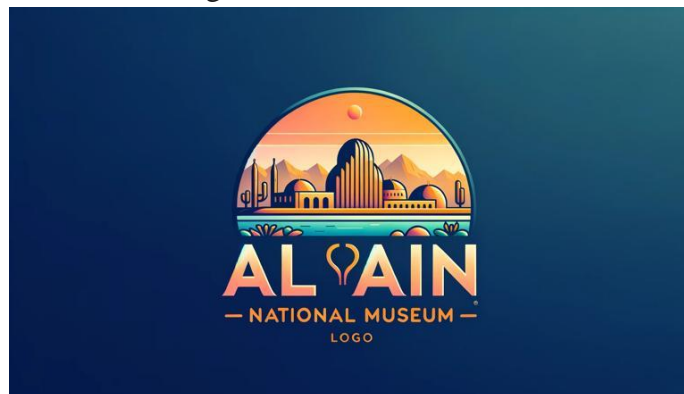
## visual identity

Generate a visual identity for the complex (Al Ain national museum and the Eastern Fort) include.

1. **Al Ain National Museum Brochure:** An elegant brochure design showcasing the museum's exhibits and information.



2. **Al Ain National Museum Logo:** A modern logo that incorporates elements of Al Ain's cultural and historical heritage.



3. **Al Ain National Museum Website:** A user-friendly website layout featuring museum history, exhibits, and visitor information

## Visitor Management Plan for the Complex of AL -Ain National Museum and the Eastern Fort



**4-Al Ain National Museum App:** A sleek mobile application design offering virtual tours, exhibit information, and ticket booking.



**5-Al Ain National Museum Publication:** A sophisticated publication layout with high-quality images and informative content about the museum.



These images collectively represent a cohesive and culturally reflective visual identity for the museum.

### Interactive Methods

1. **Touch Screen Information Kiosk:** Visitors using an interactive touch screen kiosk.



**2.Hands-On Artifact Exhibit:** Visitors interacting with replicas of historical artifacts.



**Virtual Reality Historical Exploration:** Visitors wearing VR headsets to explore historical scenes.



**4. Interactive Workshop for Children:** A facilitator guiding children in a themed craft workshop, and interactive toys.



These images showcase diverse, engaging, and educational interactive experiences available in a modern museum environment.

**URBAN FURNITURE**

Designing urban furniture for the Eastern fort in Al Ain requires a blend of traditional Arabic design elements with modern functionality, respecting the unique heritage of the region. Picture benches crafted from rich, dark wood with geometric Arabic patterns, complementing the fort's sandy stone architecture. Lighting fixtures could be styled as modern interpretations of traditional Arabic lamps, casting intricate shadow patterns that enhance the mystique of the site at night. Litter bins might be designed with elements of Islamic art, subtly blending with the fort's aesthetic. Signage and information boards would use materials like aged brass or carved wood, featuring Arabic calligraphy and motifs. The overall design would honor the cultural significance of Al Ain, adding contemporary functionality while maintaining the fort's historic charm. Let's visualize this concept.



Figure (27) suggested designs incorporate elements like benches with geometric Arabic patterns



Figure (28) suggested modern interpretations of traditional Arabic lamps

## 2 The National Museum (the old museum)

Keeping and dedicating the old museum (AL -Ain National Museum) for Sheikh Zayed bin Sultan Al Nahyan as a biographical Museum. Born in 1918 in Abu Dhabi, Sheikh Zayed was the youngest of the four sons of His Highness Sheikh Sultan bin Zayed Al Nahyan, Ruler of Abu Dhabi from 1922 to 1926. At the time of Sheikh Zayed's birth, the economy was based primarily on fishing and pearl diving and on simple agriculture in scattered oases inland.

As Sheikh Zayed grew into a young man, he travelled extensively throughout the country, gaining a deep understanding of the land and its people. In the early 1930s, when oil company teams arrived to undertake preliminary geological surveys, he obtained his first exposure to the industry that would shape the development of the UAE today (bin Hamid, A, 1971). Through the late 1920s and 1930s, Sheikh Zayed's thirst for knowledge took him into the desert, living alongside Bedouin tribesmen to learn all he could about their way of life and connection with their surroundings. He joyfully recalled his experiences of life and his initiation into the sport of falconry, which became a lifelong passion.

In 1946, Sheikh Zayed was chosen as Ruler's Representative in Abu Dhabi's Eastern Region, centred on Al Ain, 160 kilometres inland east of Abu Dhabi. He brought to his new task a firm belief in the values of consultation and consensus and his judgments 'were distinguished by their acute insights, wisdom and fairness.' The job involved ruling over six villages and an adjacent desert region (Ahmed, G., 2022). In August 1966, Sheikh Zayed became Ruler of Abu Dhabi, with a mandate to develop the Emirate as quickly as possible. His

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years in Al Ain had given him valuable experience in government and time to develop a vision of progress. With the export of the first cargo of Abu Dhabi crude oil in 1962, Sheikh Zayed could rely on oil revenues to start an infrastructure overhaul, constructing schools, housing, hospitals and roads (Yakheek, M.2003). In 1968, with the British announcement of the country's withdrawal from the Arabian Gulf, Sheikh Zayed stepped to action to quickly establish closer ties between the Emirates. Together with the late Ruler of Dubai, Sheikh Rashid bin Saeed Al Maktoum, Sheikh Zayed called for a Federation that would include not only the seven Emirates that made up the Trucial States, but also Qatar and Bahrain. Eventually, seven states followed Sheikh Zayed in establishing the UAE, which formally emerged on the international stage on 2 December 1971 (Heard-Bey, F.2001).

One foundation of his philosophy as a leader and statesman was that the resources of the country should be fully used to the benefit of the people. This extended to the women of the UAE, who flourished under his visions of education, employment and equality for all Emiratis. In governing the nation, Sheikh Zayed drew from Arabian Bedouin traditions of consensus and consultation. At an informal level, that principle has long been practised through the institution of the Majalis (council), where a leading member of society holds an "open-house" discussion forum. The forum allows any individual the opportunity to proffer views for discussion and consideration (Yakheek, M.2003).

In 1970, recognizing that Abu Dhabi was embarking on a process of rapid development, Sheikh Zayed formalised the consultation process and established the National Consultative Council, bringing together the leaders of each of the main tribes. A similar body was created in 1971 for the entire UAE – the Federal National Council, the state's parliament. As the country grew, the conservation of the natural environment and wildlife was critical to Sheikh Zayed (Alhosani, H.2012). He believed that the character of the Emirati people derives, in part, from the struggle to survive in the harsh and arid local environment. In this vein, Sheikh Zayed worked throughout his life to ensure the preservation of species such as the Arabian Oryx and the sand gazelle. The World Wildlife Fund recognized his great contribution with the prestigious Gold Panda award (Coles, A.2013).

Sheikh Zayed passed away in 2004, in his late eighties, leaving behind an inspiring legacy as the father of the nation. He was succeeded as the UAE's President and as Ruler of Abu Dhabi by his eldest son, His Highness Sheikh Khalifa bin Zayed Al Nahyan (MacLean, M.2021),

Creating visualizations that respectfully showcase different aspects of a museum dedicated to Sheikh Zayed bin Sultan Al Nahyan, involves focusing on more general representations. These visualizations will symbolize his life stages and contributions., starting with the exhibit on his early life and education, and then moving on to the other elements:

1. **Early Life and Education Exhibit:** Symbolizing his formative years with imagery representing education and cultural upbringing in the context of the UAE.

2. **Gallery of Achievements:** Highlighting his significant achievements through abstract representations.

3. **Cultural Heritage Section:** Showcasing the UAE's rich cultural heritage that Sheikh Zayed worked to preserve.

4. **Environmental Conservation Exhibit:** Illustrating his initiatives in environmental conservation and sustainability.

5. **Library and Research Centre:** Depicting a space dedicated to learning and research related to his life and the UAE's history.

6. **Memorial Garden:** A serene garden space representing his love for nature and the environment.





Figure (28) suggested entrance hall for Sheikh Zayed bin Sultan Al Nahyan museum



Figure (29) suggested library for Sheikh Zayed bin Sultan Al Nahyan museum

## The new Museum (extension museum)

### 1 The location of the new museum

The location of the new museum was proposed in the land of the rooms serving the site, located south of the Sheikh Zayed Museum, taking care not to remove any part of the oasis.



Figure (30) the suggested location for the new museum

One of the most important changes that occurred is to change the main entrance of the site while keeping it available in case of changing the visit plan, Where the main entrance was proposed in terms of gate fort so that visitors enter the square between the fortress and the old and new museum.

## 2 Landscape & gardens

Gardens were designed to suit the building lines and the nature of the site (the Oasis), use local plants and trees that bear the climate of the site. Adding fountains to modify the temperature in the site. On the other hand, Barking was suggested to be in the area which is located in the north side of the site, and designed pedestrian tunnels to link the Barking with the site to make crossing the road safer.

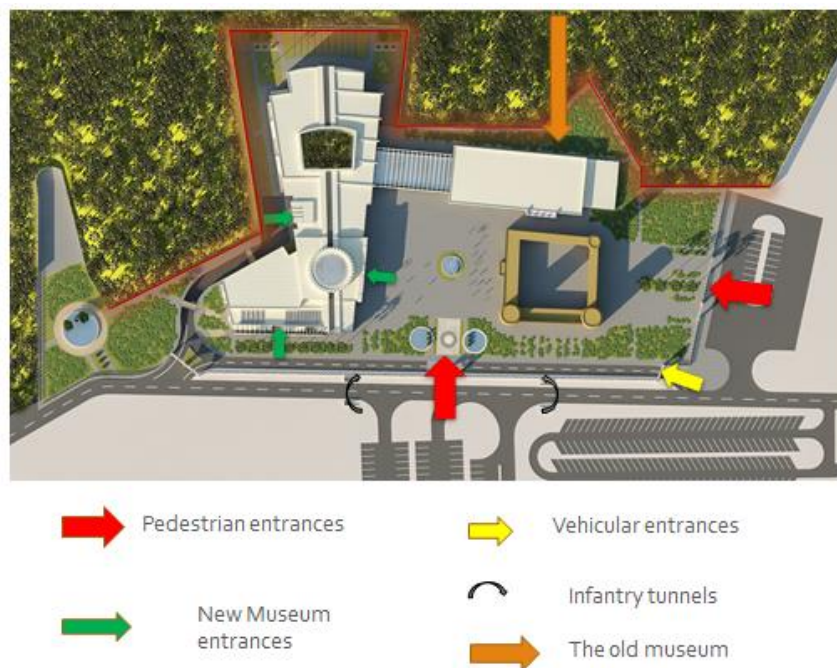


Figure (31) the suggested layout for the complex

## 3 Philosophie of layout elements

The fountain in the middle was designed like the eye that looks at the Fort. Confirming the number three in the site through planted trees next to each other in different places, in order to emphasize the number of the main site (the Eastern fort, the old museum and the new museum).



Figure (32) Philosophie of layout elements

The museum is generally composed of two main floors and a small third floor which is complementary to the ground floor (Giebelhausen. M, 2006 – Tzortzi. K,2007)The height of the museum will be 10 meters, so that it isn't higher than the fort towers.



*Figure (33) the suggested layout for the complex*

### **The new museum will consist mainly of:**

- Entrance lobby
- Tickets
- Cloakroom
- Gift shop
- Temporary Exhibition
- Permanent Exhibition
- Theater
- Conference Hall
- Library
- Lecture halls
- Restoration laboratories
- Administrative department
- Cafeteria and bathrooms
- Stores

### **4 The ground floor**

It consists of the entrance lobby, lead to the main sections of the museum. the design has been created flexible to be possible of separating key parts according to use and management plan.

A separate entrance is also designed for the administrative department and the library so that this section can be used separately in special cases.

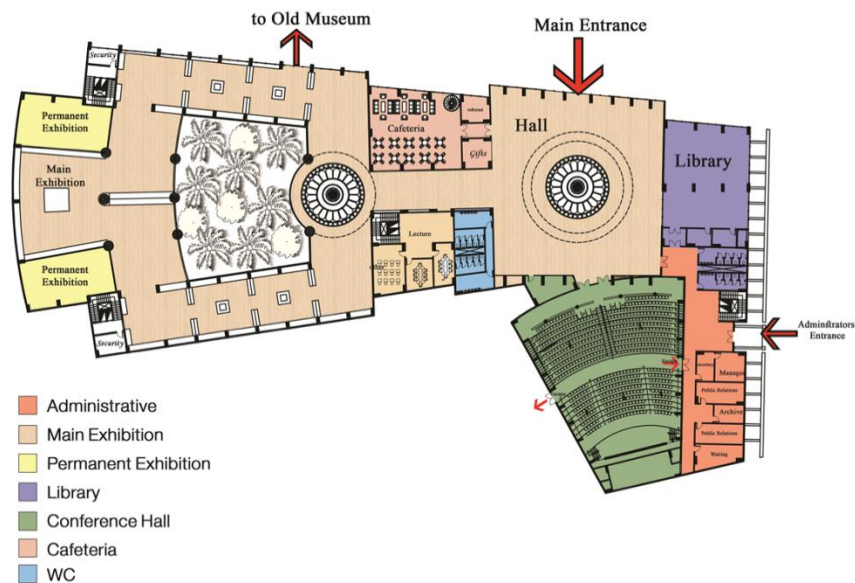


Figure (34) the museum ground floor for the new museum

### 5 The basement

Although it is low level but environmentally friendly and surrounded by gardens on both sides, research is appropriate to contain the sections of restoration and stores. The basement starts with a lobby that leads to the restoration department, warehouses, stairs and services. For restoration laboratories, there are 3 restoration plants, separated by the type of pieces to be repaired. They were designed according to the latest design principles and international standards. And stores contain storage spaces with the management of the store to record the pieces and secure the link with the Department of stores section of the above view by stairs and elevators of special sizes.

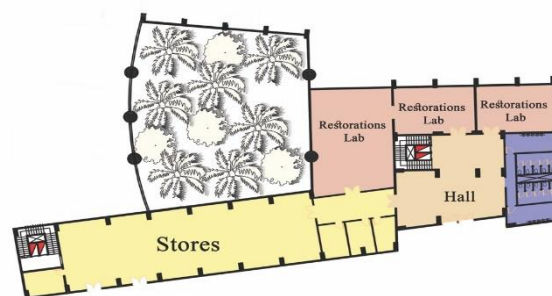


Figure (35) Museum basement floor for the new museum

**This extension museum will have sections for:**

- Natural history section featuring Al Ain’s landscape, geomorphology and climate of Al Ain, and its role in shaping the culture over the millennia.
- Section for the falaj system telling the story of this ancient engineering marvel.

## 6 The Mass

Mainly the museum block consists of two parts, one glass, the northern part and the opposite of the fortress, and the other part relatively solid in other façades directly exposed to the sun. The philosophy of integrating glass with the traditional style combines ancient and modern, as the mission of museums is to connect new generations with their past and heritage (Marstine. J. 2013).



*Figure (36)* suggested design for the outside walls for the new museum



*Figure (37)* suggested design for the outside walls for the new museum

The glass of the façade was chosen directly to the castle to provide a visual view of the castle from inside the museum and also to reflect the image of the castle for people looking at the new museum. As the glass facade in the north will not be affected by the sun, there will be no heat penetration of the building, and the glass on the northern side provides constant natural light throughout the day, saving the consumption of electricity.



**Figure (38) suggested gate**



**Figure (39) suggested entrance**

The other facades are designed in a local style that suits the region and its culture and reflects the depth of civilization found in the area. For the elements on the façade, it was taken from the fortification elements, and was used to achieve the connection of the fortress, but in a modern manner.



**Figure (40) elements on the façade, it was taken from the fortification elements**

## Interior Design and display

### The entrance Hall

It gives great importance to the museum and its center is surrounded by a circular starry dish. It has a reception, a waiting area and a site market and is distributed to all major sections.



*Figure (41) the main hall*

### The Exhibition

The museum has large exhibition spaces of about 2000 meters square. The display starts from a corridor that leads to the main view, and This corridor is naturally lit from the glass ceiling and contains old and rare pictures of Al Ain and the rest of the Emirates. The corridor ends with a huge display that welcomes visitors and offers them a brief about the museum (Boumansour. F,2011).



*Figure (42) suggested hall*

Then the visitors' journey begins in the south left wing, which is divided according to the elements and heritage items, and then they reach the main show room. There are two permanent Exhibitions on either side of the main hall. The northern wing of the museum is similarly divided into the southern pavilion, where you can go to the old Sheikh Zayed museum or return to the new museum lobby.

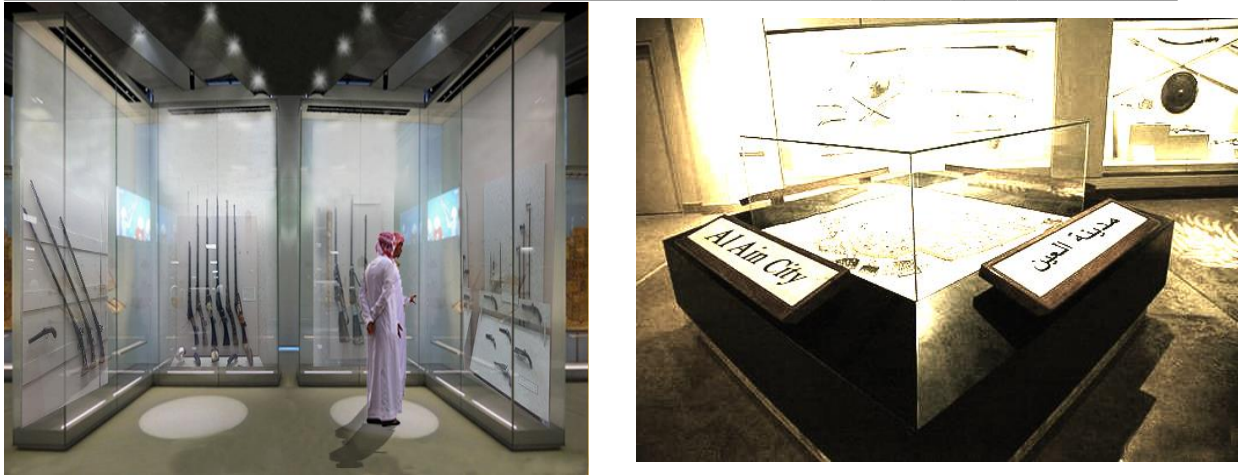


Figure (43) suggested show cases

### The Eastern Fort (3D mapping and sound & light)

Because of the low Capacity of the fort, will add interactive methods for display the history of it, as the 3D mapping and sound & light show. Bringing the past to life: 3Dmapping step through a portal to ancient times, with the memorable fort sound and light show, will take you on a journey hundreds of years back, bringing the history back to life (Reid, D. A, 2019).



Figure (44) suggested sound &light show for the fort

### The Eastern Fort VR (Virtual Reality)

Historic sites make for the best museums and the best storytellers, by simply standing in a room or overlooking the ruins of days past, immediately transported to another time, another person's experiences. and these interactive virtual tours take you right there ...past the throngs of tourists and face to face with history (Ibrahim. S, 2019), (Katifori. A, 2018).

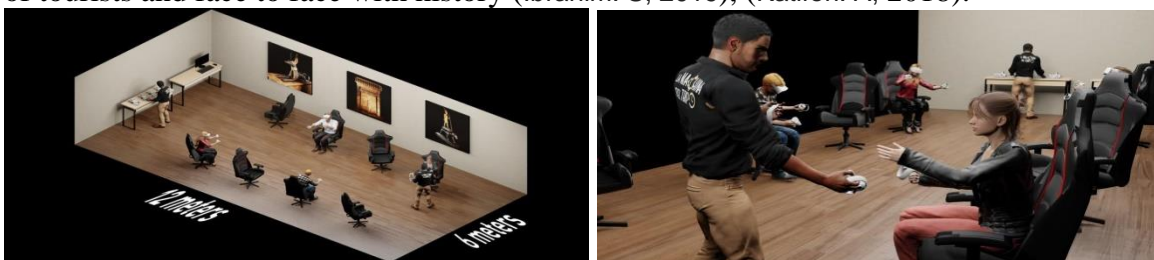


Figure (45) suggested VR



## **The Oasis**

It will access as a living museum and will be a part of the site and add more facilities as the following:

- Oasis is accessible to the public
- New walls allow views into plots
- Paths are re-paved & provided with lighting & way finding
- Oasis parks are created next to oasis
- Entries are designed to be visually cohesive
- Views of oasis are maximized as possible
- Visual and physical links between forts
- Wadi is restored
- Livestock market is moved to an appropriate location
- Physical links to the eastern fort & the national museum are created

## **Conclusions**

- The absence of a proper visitor management plan has resulted in the deterioration and inefficient operations of the Al-Ain National Museum and Eastern Fort complex.
- A comprehensive, multifaceted management plan is essential to address deficiencies, ensure sustainable preservation and growth, and enhance the sites' cultural value.
- If implemented successfully, the proposed strategies can transform the complex into a vibrant cultural destination by enhancing visitor experience, expanding educational opportunities, ensuring financial sustainability, and promoting community involvement.
- The management plan provides a strategic roadmap and actionable recommendations based on assessments of the current state, best practices, and stakeholder perspectives.
- Regular review and adaptation of the plan will be key to responding effectively to evolving needs and emerging challenges.
- Overall, the management plan represents a crucial first step toward the sustainable development and promotion of these significant heritage sites in Abu Dhabi.

This paper aims to provide development and prosperity within the central region of Al Ain without compromising the authenticity that have shaped the city and its continuing to make it unique. In line with this ambition, the following goals provided a framework for all subsequent goals and strategies:

- Developing a sustainable plan for the central region as it relates to the wider context of Al Ain.
- Create an extension of the Al Ain National Museum to promote sustainable cultural development in the future.
- Make the central region of Al Ain a built environment that celebrates the richness of its unforgettable past and traditional building concepts, and integrates it with the diversity of current needs.
- Connect Al Ain effectively with a multimodal transportation system that is sensitive to the economy, environment, cultural and social context
- Establish a permanent cooperative relationship among ADACH, local universities, and NGOs to carry out research projects and increase public awareness of the

importance of historical heritages.

- Preserve existing historic heritages and maintain their current conditions, including uses and appearances.
- Integrate all cultural resources in the district spatially and administratively to better preserve them and to make them accessible to visitors.
- Balance tourism development with historic preservation, by developing Al Ain Oasis which surrounding the Eastern fort and the national museum to be access for the visitors through designing corridors and greenways as official sightseeing routes.

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