

WORLD HERITAGE INTERACTIVE MUSEUM

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Abstract

Museums are institutions that preserve and interpret the material evidence of human race, human activity and the natural existence of this world. Jeddah is a place with abundant natural, cultural and historical assets, which is a major touristic attraction at Saudi Arabia. Thus, to complement its heritage, this work proposes the development interactive museum at Jeddah, Saudi Arabia. In this work, three case studies were analysed to comprehend the important aspects of museum architecture. Based on the analysed case studies, for the current proposed interactive museum, the estimated gross floor area is 20577 m². The interactive museum is comprised of few zones such as exhibition spaces, educational zone, auditorium, services, administration and amenities. Furthermore, 3 sites were proposed to develop the museum. Based on site evaluation analysis, site 2 attained highest evaluation score of 70 and it was selected as the development site. The interactive museum is an elaborate open-air museum design. It will host numerous exhibitions and educational spaces. This museum is expected to be a major tourist attraction in Jeddah and will contribute to Saudi Arabia's economy through its tourism industry.

Keywords-- museum, design, tourism, heritage, Saudi Arabia, culture

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INTRODUCTION

Each nation has an expanded history of which they are proud, exhibitions and museums are intended to house the biggest collection of monuments of people's history and culture as well as to introduce us to distinct cultures and towns around the globe [1]. Now, however, these exhibits and showrooms have started to have different meanings and identities that assist the visitor gain a learning experience with each visit. As a consequence, museums have stopped being the sacred institution, but more of an amusement park that attempts to educate its tourists and guests [2].

In order to provide the visitor with the maximum experience, museum are currently designed to take the visitor through the different showrooms and remove the boundaries between the visitor and the exhibits to provide the sense of understanding of history through interactive display [3]. The exhibits are also varied with the incorporation of several historical civilizations related to the location of interest or country of interest [4]. In fact, museums display personal collections of rich people, households or business organizations, and artifacts. These have often been exhibited in rooms or cabinets [5].

There have been many conquerors across the Arab countries and cultures that have gone by. Hence, this has been conserved in museums, whether it is newly established or ancient [6]. In Saudi Arabia, there have been many initiatives that represent the Saudi culture and implement the notion of museum, beginning with the Science and Technology Center in 1990, then the National Museum of Saudi Arabia, which is a significant national museum in Saudi Arabia [7]. It was established in 1999 and it is part of the King Abdul Aziz Historical Center in Riyadh [7]. Since Saudi Arabia is competitive in creating and implementing new ways of becoming a major global tourism destination, an interactive museum with a park will create a new and interesting location for citizens to gather and learn. Therefore, this study presents the proposal on developing an interactive museum at Jeddah, Saudi Arabia.

CASE STUDIES

Three case studies related to museum architecture were analysed for this work. The case studies selected are:

- King Abdul-Aziz Historical Center
- Buenos Aires Contemporary Art Museum
- The Museum of Middle Eastern Modern Art

King Abdul-Aziz Historical Center

King Abdul-Aziz Historical Center is located at Riyadh, Saudi Arabia (Figure 1). It was designed by architect Rasem Badran and BEEH Group Consultants. The building type is urban design with built up area of 32700 m² and site area of 390000 m². It provides major cultural and urban green parks integrated into the city through a network of recreational plazas and walkways. The urban design surrounding major streets even penetrates the two longest buildings, the National Museum and the Documentation and Research Center. The site was divided into five parts: Landscape Development, National Museum, Conference and Library Building, Documentation and Research Center, Adobe Mud Houses Rehabilitation. The site created two fabrics, vehicular roads like the center of the city, and pedestrian strings of walks and plazas that weaved cultural buildings and parks if the center of the city's social life was intended to create public spaces that foster social interaction for different age groups and social groups. The main function of this center includes public park, national museum, antiquities and museum agency, traditional buildings and Al-Murabba palace.



Figure 1. King Abdul Aziz Historical Centre

Buenos Aires Contemporary Art Museum

Buenos Aires Contemporary Art Museum is located at Buenos Aires, Argentina (Figure 2). The structure was designed by architect Shelby Ponce and Eduardo Ponce. This museum has a built up area of 7620 m² and site area of 6000 m². The Buenos Aires Museum handed away to the town a big part of the property in the shape of a coastal sculpture garden by raising its two bottom ends. This has developed social, metropolitan environments all around the construction, activating the premises and linking the museum's east and west part. The building's design has been intended to minimize the effect on the ground room, providing a sequence of accessible, versatile gallery areas that will effectively handle the broad variety of scales discovered in libraries that can readily be adapted to display facilities, performance art, carvings, paintings and many other architecture media. In addition, the structure's skin and spaces are both translucent and incredible, combining gallery spaces, structural elements, circulation and semi-transparent façade filter glow all through the museum and offering good view from all directions. The building has 4 level that accommodates multipurpose galleries, auditorium, loading area, digital art room, administration office, leisure area, restaurants and café .



Figure 2. Buenos Aires Contemporary Art Museum

Museum of Middle Eastern Modern Art

Museum of Middle Eastern Modern Art is located at Dudai, United Arab Emirates (UAE) (Figure 3). It was designed by architect UNStudio. The building type is museum and it has a built area of 41200 m² and site area of 25000 m². This structure offers a boutique inn with 60 keys and a boutique retail walk on the dynamic waterfront of Culture Village, and a top-level signature café with 360-degree views of Dubai. Inside, this museum's layout activates contemplation. The building is designed with free flow of spaces that utilized modern architecture.



Figure 3. Museum of Middle Eastern Modern Art

PROGRAM ASSUMPTION AND SPACE DETAILS

For the proposed interactive museum, the estimated gross floor area is 20577 m². In addition, the net area is estimated to be 14403 m². Table 1 shows the zone division of the proposed new building. Based on Table 1, the zones of the proposed museum

are exhibition spaces, educational zone, auditorium, services, administration and amenities.

Table 1. Space details

Zones	Gross floor area (m ²)	Net area (m ²)	Floors	Footprint
Exhibition spaces	11143	7800	2	5571
Educational zone	2023	1416	3	674
Auditorium	1263	884	1	1263
Services	2559	1791	2	1279
Administration	589	412	3	196
Amenities	3000	2100	1	3000
Total	20577	14403	-	11983

PROPOSED SITE

Proposed site: Site 1

For Site 1 (Figure 4), this site is located Al Andalus Street, Al Ruwais district. This site has an area of 65000 m². The main landmark in the area is the Jeddah municipality.

Proposed site: Site 2

For Site 2 (Figure 5), it is located at Prince Faisal Bin Fahd Street, Al Shatea District. This site has an area of 49000 m².

Proposed site: Site 3

For Site 3 (Figure 6), the site is located at Baishin Street, Al Balad District. This site has an area of 40000 m².



Figure 4. Site 1



Figure 5. Site 2



Figure 6. Site 3

SITE EVALUATION AND ANALYSIS

This work has proposed 3 potential sites for the interactive museum construction. From these 3 sites, one site was selected based on site evaluation. Several criteria's were used for site evaluation, which were accessibility, visual quality, climate orientation, neighborhood compatibility, aesthetic, visibility, amenities, future development, security and tourist attraction. Table 2 shows the site evaluation score for site 1, site 2 and site 3. Based on Table 2, site 2 has attained the highest score of 70, compared to site 1 with 62 and site 3 with 69. Hence, site 2 was selected as the proposed development site. The site is located at Al Shatea District, Prince Faisal Bin Fahd Street, north of the Wave Roundabout. The site is surrounded by three-sided roads, which are East Prince Faisal Bin Fahd Street, West Cornish Street, and a south a secondary street. The site can be accessed through a secondary road, directly connected to Prince Faisal Bin Fahd Street. And pedestrians can easily reach the site with a walking distance from the waterfront. In terms of climate, the site retains its warm temperature in winter, which can range from 15 °C (59 °F) at midnight to 25 °C (77 °F) in the afternoon. Summer temperatures are very hot, often breaking the 40 °C (104 °F) mark in the afternoon and dropping to 30 °C (86 °F) in the evening. This site is surrounded by few landmarks, such as Jeddah open museum, Helton hotel, Sheraton hotel and amusement park. Furthermore, this site has a good view and it is beside the sea and waterfront. Figure 7 shows the proposed conceptual zoning at the site.

Table 2. Site evaluation

Criteria	Grade	Site 1	Site 2	Site 3
Accessibility	10	8	7	8
Visual quality	5	3	5	4
Climate orientation	5	4	4	4
Neighborhood compatibility	10	5	9	8
Aesthetic	10	7	9	10
Visibility	15	14	13	14
Amenities	5	5	5	4
Future development	5	4	3	3
Security	5	4	5	4
Tourist attraction	10	8	10	10
Total	80	62	70	69

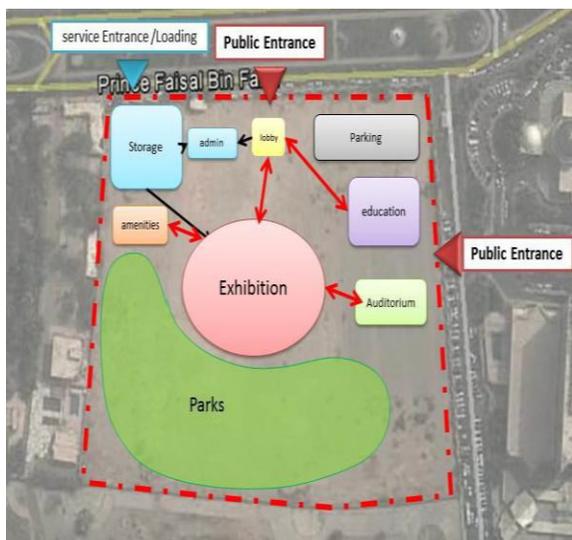


Figure 7. Final conceptual zoning

PROJECT DESIGN

Interactive Museum is an elaborate design for an open-air museum. It will host numerous exhibition and educational spaces. That leads the visitor to a journey of entertainment. This project will provide an outdoor experience to attract a wide spectrum of audiences to appreciate history and art. As well as offering opportunities for educational and artistic learning. Figure 8 to Figure 10 shows the proposed design of the interactive museum. In addition, the interactive museum was created to create an interaction zone for visitors by engaging their senses of wonder and vision with an interactive exhibition on the theme. By including Interactive wall and floor projections that draw visitors into delightful, shared realities, also interactive tables and screens reach out to visitor as playful, social experiences that deepen their understanding through discovery and delight, and bring themed entertainment to life. Furthermore interactive wall and floor projections was included to draw visitors into delightful, shared realities, interactive tables and screens also reach out to visitors as playful, social experiences that deepen their understanding through discovery and delight and bring themed entertainment to life. Moreover, the museum has a multimedia showroom which has 270° screen which places the visitor in the center of a spectacular immersive experience. Powerful and evocative images of unparalleled emotional intensity bring visitors to the heart of great moments in history and its development. Besides that, this museum has an open air exhibition that creates an open air exhibition, and creating an interactive pedestrian movement within the project. In addition, by connecting the existing rich contents (indoor) with attractive landscape (outdoor), so the visitors can wander around and enjoy encounters and surprises this variety of contents will make diversity of people visit the park.

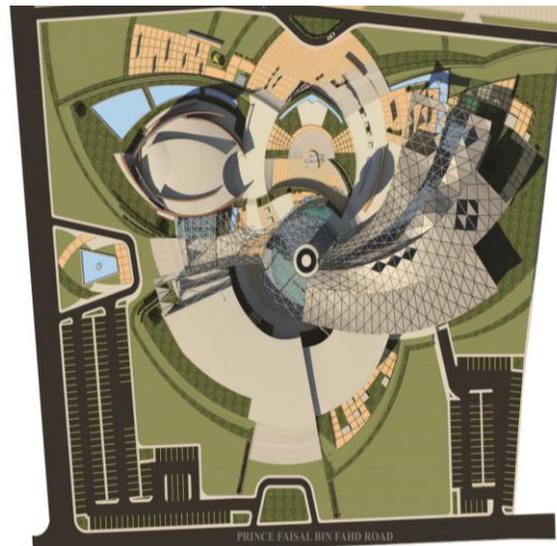


Figure 8. Top view



Figure 9. Side view



Figure 10. Overview of the proposed interactive museum

CONCLUSION

This work has proposed the development of interactive museum at Jeddah, Saudi Arabia. For the proposed museum, the estimated gross floor area is 20577 m². This museum is comprised of few zones such as exhibition spaces, educational zone, auditorium, services, administration and amenities. This interactive museum is expected to promote Jeddah's cultural and historical identity among community and visitors. Furthermore, it is expected that the community of Saudi Arabia will benefit economically and socially as a tourism initiative.

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