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FLOATING MARINE CLUB

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Abstract

Jeddah is known as the "Mermaid of the Red Sea" as well as the entertainment capital of Saudi Arabia. The proposed project Floating Marine Club that serves the community by providing a social spot that will contain entertainment and commercial facilities. People will get to experience a new marine activity that will have many purposes for all ages and both genders. The concept is to create an artificial "Archipelago" with a spine that connects all the islands together, and creating an enclosure bay. Plazas and commercial points are the separation between each main entertainment spot like Yacht Club and Water Sport Center which we don't have in Jeddah. The islands are distributed as a "horseshoes" with three gates between every three islands, and the islands are oriented according to environmental analysis. The selected site location is located next to Al-Corniash road, based on several site evaluations criteria namely access and demographic pattern, future development, noise level, security and safety, surroundings, utilities, visibility, and visual quality. The Floating Marine Club will become a landmark for Jeddah.

Keywords--Floating Marine Club, Landmark, Entertainment, Commercial Facilities

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INTRODUCTION

Saudi Arabia core is to strengthen the tourism sector and defies the obstacles that can affect its enhancement as a major contributor to its cultural and economic development [1, 2]. Creating new attractions points for citizen and outbound tourist can help the kingdom to raise the income. Meanwhile the people around the world wishes to experience the water life and leisure activities. People thought that building can only construct on the land. The development of life has taken place likely in the environment of water. Rich location of Jeddah, with wonderful coral reefs underwater waiting to be explored, today world has affection for water areas.

Techniques for floating project are available since long time ago [3]. Other example how the people in Iraq lived in reeds houses near the river on artificial islands. It is the time to benefit from the water properties. This means using the energy source from the surrounding water areas and the mobility of floating architecture [4]. The base for an attractive place is the new feeling of direct contact with the natural environment [5]. According to Stopp and Strangfeld, 2003 water offers sustainable technologies are used to reduce the energy consumption that is taken from the surrounding water which can enhance the kingdom economic [6]. Therefore, the new architectural trend is designing the floating architecture which will be needed more in the future. The aim of study is to investigate how the floating architecture can play a huge role in developing the crowded cities as well as benefits the environment.

CASE STUDIES

Two floating cities located in South Korea and USA are chosen for the case studies. The selected floating cities are sensitively designed to meet the project goal and suit the local condition. They are:

a. Seoul's Floating Islands, Seoul, South Korea
b. The Lens Pier, Saint Petersburg, Florida, USA

Seoul's Floating Islands, Seoul, South Korea

Three man-made floating islands are located in the site of the amazing Chenggyecheon channel in Seoul, Korea (Figure 1). These Islands are representing culture, educational and entertainment hubs in the most populated cities in the whole world. Because of the limited space in Seoul, the designer looked up for uncommonly building site which is the Han River to create a huge social space and international, conventions, as well as for recreational purpose for the growing city. The floating islands were built as part of the river to enhance the waterfront [7].

Seoul's Floating Islands creating places of restaurants, recreational, and culture among an extremely active city. The Han River divides the city in half, and is virtually cut off by highways. The islands are part of large scheme intend to simulate the water landscape. The island contains several cultures, educational and recreational functions. They will be the venue for multiple events. The concept is inspired from the stages of blooming flower: seed, bud, and blossom. Each island represents one stage of these stages. The smallest island is the "seed" which is named island Solvit. This island intended as a base hub for water sports, it also has a roof garden, club house and water slides that plunge in the river. The Chavit island "bud" experiences a performance space for exhibitions and entertainment events. The final island is the Gavit "blossom". It is the largest island it accommodate a 700 person capacity multipurpose hall for plays, concerts, festivals and other cultural performances, restaurants and firefly garden. The islands are incorporated septic and MEP system needed to ensure that the operation of the three islands have the least impact on the Han River and its surroundings. The facades of the floating islands are expressive of each flower stage. The LED system tied up all the islands with various of colours giving the buildings a dynamic façade changes per event [7].

The Lens Pier, Saint Petersburg, Florida, USA

The Lens Pier is located in city of St. Ptersburg aims to create a relationship between the bay, city, and people (Figure 2). Untraditional infrastructure connects the bye to the pier. It offers variety of water sports, fishing, retail shops, cafes, and a reef full of marine life located underwater. The main part is the lens where all the sport activities are located, and offers places for gathering. The lens reef leads to an open-air amphitheatre that opens to the water. A pre-cast white concrete canopy is integrating with "Micro turbines" technique in its surface above

and below the water. Two bridges create pedestrian paths rise above and beneath the canopy. Promenade, bicyclist, pier tram and services are all located to lower wood deck. Mimicked structure used underwater to produce "extraordinary new aquatic landscape" [8].

Figure 1. Seoul's Floating Islands, Seoul, South Korea [7]

Figure 2. The Lens Pier, Saint Petersburg, Florida, USA [8]

SPACE PROGRAM

Figure 3 demonstrates the functional space program of the project. All the zones are interconnected where each zone consists of several sub-zones. The Main Island consists of administration, services and common area. The Entertainment Island consists of sea activities, yacht club, services and open area. The Commercial Island consists of fish market stalls, shops, services, restaurant and café, open museum and open area. The space program of the project is tabulated in Table 1. The Entertainment Island and Commercial Island occupied the largest of compound about 45% and 35% of the project site, which is about 9619 sqm and 7482 sqm respectively.

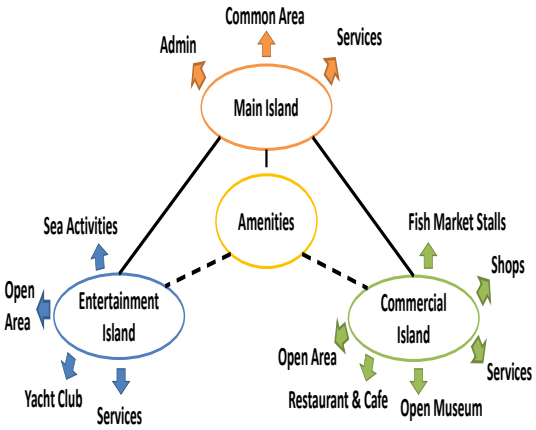

Figure 3. Functional Program

Table 1. Space Program

Zones	Percentage (%)	Users (n)	Gross Floor Area (GFA) (m^2)	Net Floor Area (NFA) (m^2)
Main Island	7	118	1995	1496
Entertainment Island	45	855	12825	9619
Commercial Island	35	665	9975	7482
Amenities	13		3705	2778
Total	**100**	**1638**	**28500**	**21375**

SITE SELECTION AND ANALYSIS

There are two sites are proposed for site selection. Figure 4 shows site 1 with area of 34,900 m^2, located in Al-Corniash in front of Al-Farsi residential towers, and it is surrounded from both sides by Sail Island "Restaurant & Park" and the Green Island "Restaurant". Figure 5 shows site 2 with area of 34,590 m^2. This site is located in north Jeddah next to King Abdullah Economic City and Al-Morooj Golf Center. Several site evaluation criteria are considered for the site location selection and they are access and demographic pattern, future development, noise level, security and safety, surroundings, utilities, visibility, and visual quality. The site evaluation result is tabulated in Table 2. Each of the criterions will be given the score from 1 to 5 and the site with highest score will be chosen as the site location.

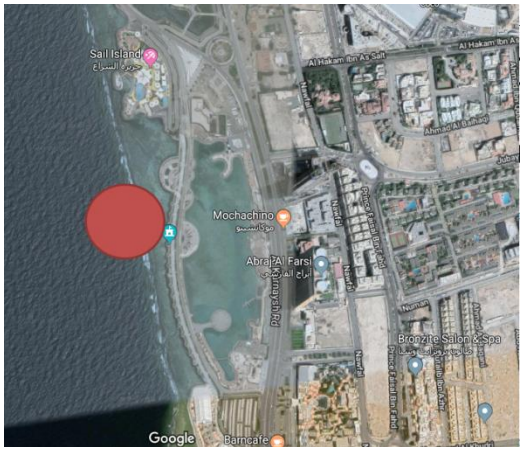

Figure 4. Site 1 [9]

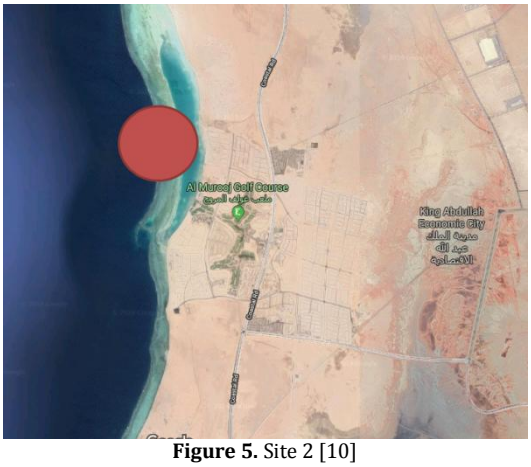

Figure 5. Site 2 [10]

Table 2. Site Evaluation Result

Site Criteria	Site 1	Site 2
Access and Demographic Pattern	4	1
Future Development	5	5
Noise Level	2	5
Security and Safety	4	2
Surroundings	3	0
Utilities	3	1
Visibility	5	1
Visual Quality	5	5
Total	**31**	**20**

Based on the site evaluation result shown in Table 2, site 1 marks the highest score and becomes the site location for the project. The site is located in the northern coast of Jeddah, next to Al-Corniash Road with site area of 34,900 m², which is capable based on the space program. The majority of the area is covered with residential. There are also a few of mixed-use areas. Commercial areas are located on the main roads. Minor greenery blocks are distributed in different areas in the neighbourhood. The Demographic Pattern is already occupied with variety of activities like; amusement parks, resort, restaurants, and malls. Figure 6 shows the site accessibility analysis. The selected site is already reachable for the people to visit these different areas.

The climate analysis of the selected site is conducted and shown in Figure 7. The warmest season in Jeddah lasts from May to October with an average of daily temperature above 37°C. The hottest month of the year is July with highest temperature of 39°C. The cold season lasts from December to February with an average temperature of 30°C. The coldest month of the year is February with lowest temperature of 18°C. Jeddah is almost humid most of the year with an average of 50% - 70%, the lowest period is between the spring seasons until the beginning of the summer. The wind in Jeddah is most often from the north 26%, northwest 26%, and west 12%. The prevailing wind moves from the southwest.

The site is mostly noisy because the location is considered as one of the attraction point in Jeddah, where it has a variety of commercial, entertainment and residential projects. Views is one of the most important factor in this project, since the project is all about entertaining in the coral life of Jeddah so the views must provide the people the experience of the coral life environment. The people need a high attraction to be attracted to this kind of projects. The visibility of the site is very obvious from Al-Corniash Road.

Figure 6. Site Accessibility Analysis

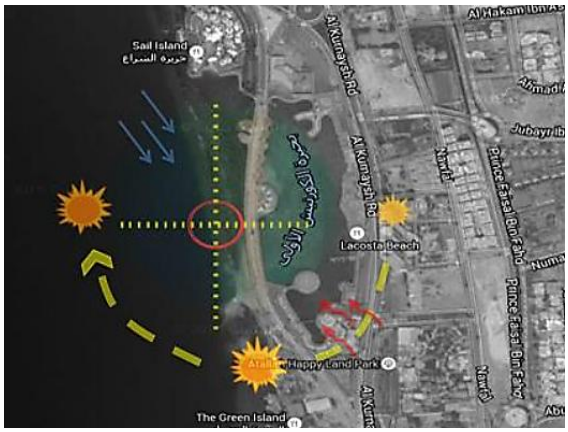

Figure 7. Site Climate Analysis

ZONING AND PROJECT DESIGN

Figure 8 and Figure 9 show the site zoning and the island orientation of the project respectively. The zoning diagram shows that the entertainment island and the commercial island are connected to the main island. The service center and the administration are located at the middle of the project. The site is chosen to create an attraction point for the residents in Jeddah, which is accessible by everyone. Providing water entertainment activities in the middle of Jeddah, instead of the one located in obhur. Figure 10 and Figure 11 demonstrate the water sport center main perspective and yacht club main perspective respectively. The main perspective of the project is shown in Figure 12.

Figure 8. Site Zoning

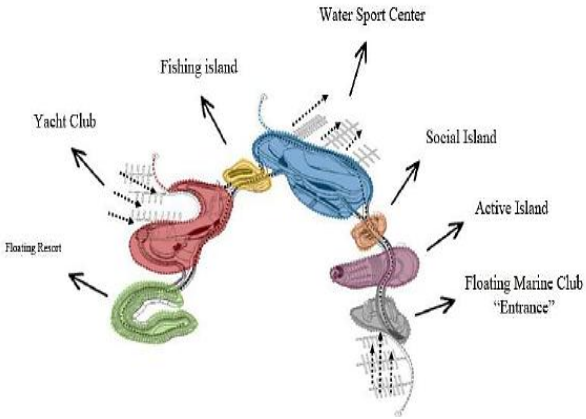

Figure 9. Islands Orientation

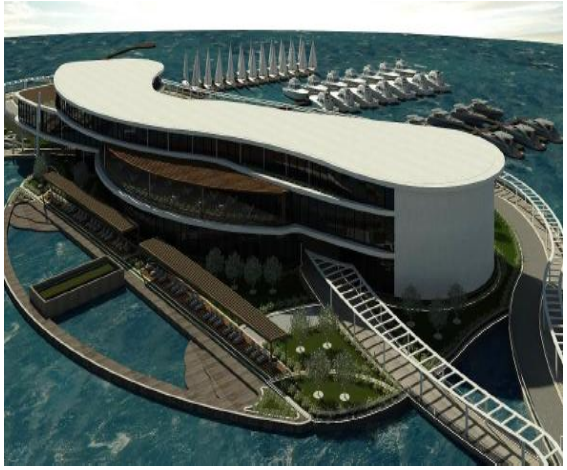

Figure 10. Water Sport Center Main Perspective

Figure 11. Yacht Club Main Perspective

Figure 12. Project Main Perspective

CONCLUSION

This project creates an attraction point that welcomes the community to experiencing new facilities and activities, which are not available widely in Jeddah, Saudi Arabia. The deployment of the project adopts the new sustainable structure method that protects coral life and not causing any damages to the environment. The project consists of three islands with its unique propose such as main island, entertainment island and commercial island. The selected site location for the project is next to Al-Corniash road. The considered site evaluations of the criteria are access and demographic pattern, future development, noise level, security and safety, surroundings, utilities, visibility, and visual quality. This project will becomes one of Jeddah's landmarks that will attract tourists in the upcoming future. In addition, the floating marine club will introduce an eco-friendly method to Saudi architects who will adapt this method in the future.

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