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WATERFRONTS DEVELOPMENT POLICIESCASE STUDY: "ALEXANDRIA & JEDDAH WATERFRONT DEVELOPMENT PROJECT"

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Abstract

Other coastal cities like in the Arab & Gulf area troubles started when the cities started to grow in an unorganized way in the last two decades & private properties occupied most of the cities waterfronts. Planners had always trying to reclaim & develop waterfronts by public governmental effort or by private projects.

WATERFRONTS DEVELOPMENT POLICIES CASE STUDY: "ALEXANDRIA & JEDDAH WATERFRONT DEVELOPMENT PROJECT"

Omar, Walid F.¹

Aim of the Study

Other coastal cities like in the Arab & Gulf area troubles started when the cities started to grow in an unorganized way in the last two decades & private properties occupied most of the cities waterfronts. Planners had always trying to reclaim & develop waterfronts by public governmental effort or by private projects.

INTRODUCTION

Human beings like to live near water. Since urban civilization began more than 5000 years ago, most cities were built along rivers, lakes or the sea.

Bodies of water provide not only transportation & food they can also give infinite pleasures of cool breezes & recreation.

Coastal cities troubles started when the industrial revolution invaded them with its factories railroads & slums.

In 19th century factories sprang up along waterfronts to be close to shipping and to use large quantities of water to supply steam boilers. Lakes & rivers further more were the cheapest & most convenient dumps for industrial wastes which poisoned aquatic life, killed an important source of food & invited diseases.

RESEARCH METHODOLOGY

The research handles the waterfront development subject in two sections as follows:

First:

The meaning of waterfront.

This section explains what is meant by waterfront.

Second:

Analytical study for waterfronts development projects.

This section reviews the waterfront development policies & projects, a comparison between the two policies to explain the points which must be kept in mind while making any waterfront development project.

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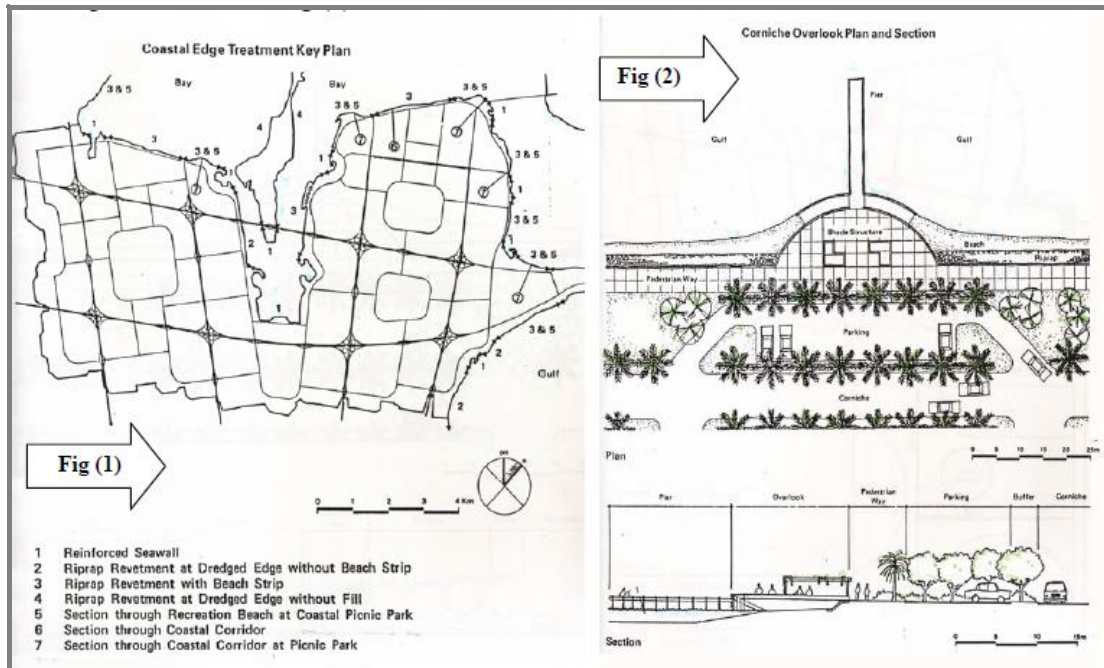
As a conclusion of the previous study, evaluation of the two waterfront development and their policies, the negative & positive points of them will be summarized at the end.

Finally, some recommendations will give to help in waterfront developing.

First: The meaning of waterfront

Waterfront is the coastal scenic corridor extending along the entire coastline. It is the strip of land comprising of the natural edge of the water, the corniche road, the coastal parks and recreational areas.

The natural edges of the water treatment vary from a hard edge reinforced seawall, to riprap revetment. Various coastal edge treatments can be applied to help define the various uses along the waterfront, Fig (1).



The corniche road is located within the coastal scenic corridor, forming the inland edge; it links coastal districts and the automobile access to coastal picnic parks and recreational areas along the coast.

The design layout and landscape treatment for the corniche road should accent scenic views & screen undesirable views to provide motorists with appealing & varied visual experience, the road should be smooth flowing & should meander along adjacent to the coastline with a continuous curvilinear, horizontal alignment. The road should be planted specially within the median to lessen glare from oncoming traffic

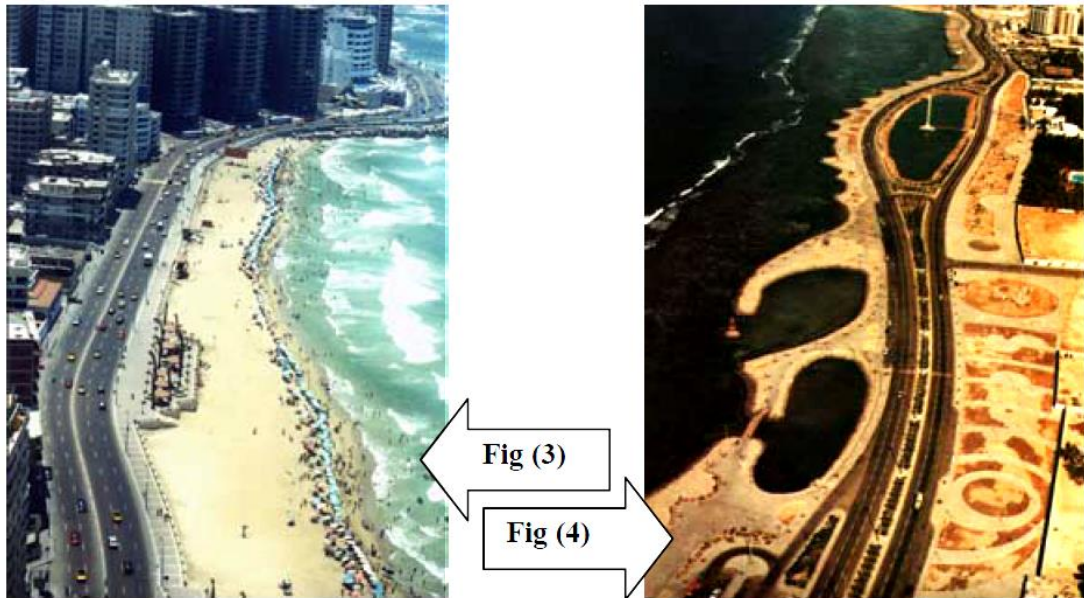
Scenic overlooks should be situated all along the corniche road to provide waterfront orientation as well as inviting views of picnic areas, parks & recreational facilities, **Fig (2)**.

Costal picnic parks & special regional recreational facilities such as marines and boat landing always create important activity nodes. So they must be located at strategic points along the coast.

Second: Analytical study for waterfronts development projects

Here we offer examples for waterfront development projects to evaluate their policies. Waterfront development policies had always been one of the two mentioned below:

- The policy of making the corniche road almost parallel to the coast line following the natural edge of the water and connecting it with the recreational areas and city districts, Fig (3).
- The policy of making the corniche road passing by areas of varying depth in the sea and making the waterfront takes the form of special piers or promenades extending into the sea, Fig (4).



The two examples will be analyzed in the following steps:

- An over view about the area of study.
- Explaining the project and its policy.

Evaluation of the project through the following elements:

Environmental condition.

- The traffic condition.
- Beautification.
- Recreational facilities.
- Services and utilities.
- The connection between the city main arteries and the cornice.
- The architectural character of the waterfront.

The two examples will be offered as the following:

- Alexandria waterfront development project as an example for the first policy
- Jeddah waterfront development project as an example for the second policy.

A comparison between the negative & positive points of the two policies will be followed to explain the points which must be kept in mind while making any waterfront development project.

Alexandria waterfront development project:

An over view:

Alexandria cornice road was built 1933 from (El. Montaza) to (Ras El Tin) running almost parallel to the coast-line despite the fact that the project was so important and great by that time it had some inherent planning mistakes .

Because of using it as a collector road the cornice road had separated the natural edge of the water and the beach's from the city districts. It also did not leave enough room for the sand beaches and its services. The road width was also not enough for accommodating the future growth of the city.

Now the cornice road has become so narrow for its traffic density which is increasing rapidly. Also the inland edge of the cornice road is continuous wall of high building and is almost impossible to expropriate for economical reasons. So the planning group of Alexandria governorate suggested increasing the width of cornice road by extending it over the cabins specially that their heights promote this almost all along the cornice road.

Explaining the project and its policy:

The plan suggested increasing the width of cornice road by extending it over the cabins roofs and using it as a walk-way. For the areas which do not have any cabins, the road will be extended over sand beaches or over the sea

water with reinforced seawalls. The width of the recent walk-way will be added to the cornice road traffic way width.

The suggestion of this plan can be summarized as the following:

- The plan had given no suggestion for the eastern harbor area from Qaitbay fort to Al Chatby area, Fig (5).

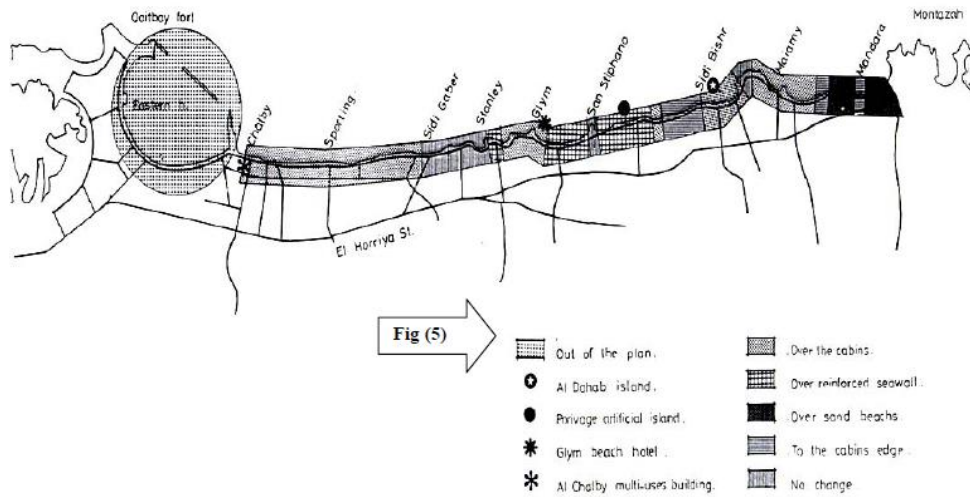


Figure 5

- The plan started from (the Suez Canal st.) at (Al Chatby) area to (Al Nabawy Al mohands) st. At (Al Montaza) area the cornice road extension in the plan can be summarized in the following suggestions:
- Extending the road over the cabin roofs as a walk way in the areas which cabins roofs height are a little more or less or in the same level of the road , e.g. (Al Cleopatra),(Saba Basha),(Glym),(Sidi Bisher) and (Miami), Fig (6)&(7)&(8).



Figures 6,7,8



Figures 9,10: Extending the road over the sea water with reinforced seawalls; e.g. the area between (Stanley) and (Saba basha), (San Stiphano) and (Al saraya).



Figures 11,12: Extending over the sand beaches in some areas of (Al Madara) beach.

Evaluation of the Project through the Following Elements:

Environmental Condition:

The planner's main interest was to increase the width of Alexandria Cornice road, so he suggested extending it on the sea water and on the few narrow sand beaches left neglecting its bad affect on the aquatic life and forgetting that city of Alex. might be one day with no sand beaches .The planner didn't even give any suggestion for increasing the sand beach areas and for saving them from the continuous sea expansion over them, Fig (13) & (14).



Figures 13,14

The Traffic Condition:

Despite that the planner suggested to increase the width of the cornice road to overcome its traffic problems, he didn't give any solution for the bottle meek areas like the (San Giovanni) hotel area which suffers from a heavy traffic density and a narrow road. On the other hand increasing the road width that way will give it irregular cross-section which would cause more car accidents. The planner also decided the road width due to the position of the cabins and its heights not according to the traffic density the future. In short the plan considerations were so limited and not appropriate for the long run, Fig (15) & (16) & (17)



Figures 15,16,17

Beautification:

The plan didn't mention any thing about the cornice beauty-fiction. No Suggestion for work of arts, lighting or plantations. Despite the fact that the cornice of Alex. Has so many important areas like (Al Silsela) and (Sidi Gabber) square they were completely neglected, Fig (18) & (19).



Figures 18,19

Recreational Facilities:

The plan didn't give elaborate suggestions except for four ideas for recreational projects all along Alexandria Waterfront. It didn't also give any suggestion for using the present group of casinos for recreational activities. The plan didn't consider the shortage of the recreational facilities in the cornice of Alexandria.

Services & Utilities:

Despite that Alexandria Beaches are suffering from shortage in services and utilities, the development plan didn't mention anything about it and didn't make any suggestion for improving them, Fig (20) & (21).



Figures 20,21

The Connection Between the City Main Arteries & the Corniche:

The development plan did not give any suggestion for the city's main arteries and its connection with the cornice.

The Architectural Character of the Waterfront:

Despite the bad and irregular architectural character of the study area building the development plan did not give any suggestion for their treatment, Fig (22) & (23).



Figures 22,23

Remarks:

The Alexandria waterfront development project was only interested in increasing the width of the cornice road in order to overcome its traffic problems neglecting all other aspects of the waterfront problems. Furthermore increasing the road width for traffic movement completely separate the natural edge of the sea water and the beaches from the city districts which has always been the main problem of Alexandria Corniche road.

Jeddah waterfront development project:

An over view:

Modern Jeddah extend about 100 KM along the red sea coast. The first budget for establishing a cornice for Jeddah was in 1384/ 1963, when one million SR were provided for beautifying (Bad Jaded) square (Al Baia) and the cornice of (Al Arbacin) lake but this project was cancelled in 1392/91 budget.

In 1390 the study of establishing a cornice for Jeddah was given to Robert Matthews, Johnson Marshal and partner's consultant office. The study found that most of the costal line was occupied by private properties which needed a great sum of money to expropriate them. This financial problem was the first obstacle in applying Mathews's plan.

As a result the municipality of Jeddah changed the plan not only to avoid this financial problem but also to facilitate the public reach the sea. The result of the municipality effort is the unique waterfront of Jeddah.

So this study will explain both of the two development projects:

- A. The Robert Matthews & Johnson Marshal project.
- B. The present condition of the waterfront the municipality of Jeddah Project.

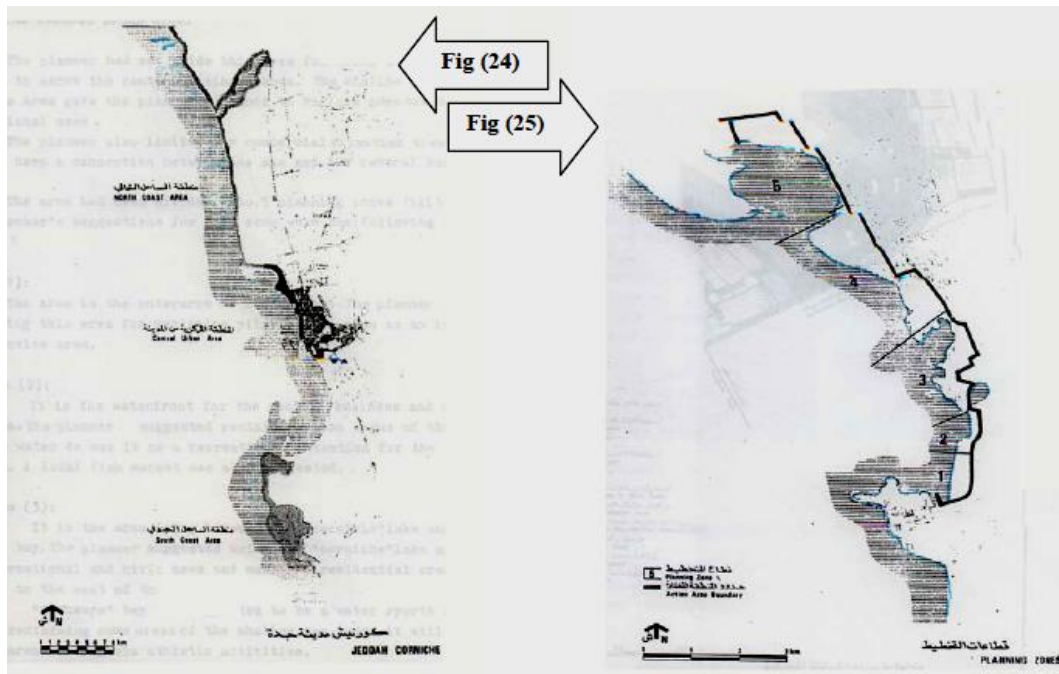
Explaining the Project and its Policy:

A- Robert Matthews and Johnson Marshal project:

This study started in 1976 its policy depended on pas-sing by the cornice road on areas of varying depth in the sea and reclaiming some of the shallow sea water to use it as a recreation area. The study had divided Jeddah waterfront into 3 zones, the central urban area (started from the port to the "Raytheon" area), and the old palace north of "Obhur") and the south coast area (extends for 11KM south of the naval bases), Fig (24).

- The Central Urban Area:

The planner had set aside this area for being a recreational area to serve the central business area. The shallow sea water in this area gave the planner a chance to reclaim some areas for recreational uses, Fig (25).



The planner also limited any commercial extension towards the sea to keep a connection between the sea and the central business area.

The area had been divided into 5 planning zones; the planner's suggestions for each zone were the following:

- Zone (1):The area is the entrance of Jeddah port. The planner suggested using this area for receiving pilgrims and also as an industrial service area.
- Zone (2):It is the waterfront for the central business and commercial area. The planner suggested reclaiming some extension for the central area. A local fish market was also suggested.
- Zone (3):It is the area lying between the "cornice" lake and "Arruways" bay .The planner suggested using the "cornice" lake area for recreational and civic uses and making a residential area and hotels to the west of the lake.

"Arruways" bay was suggested to be a water sports center and by reclaiming some areas of the shallow sea water it will include an area for schools athletic activities.

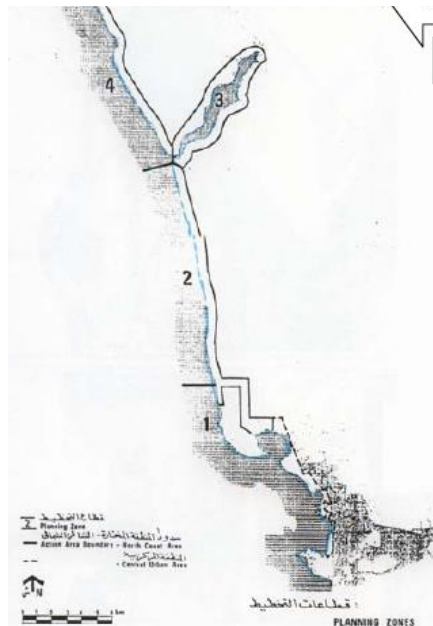
- Zone (4):It is the area between "Arruways" bay and "Al Hamra" palace .it was suggested to be a residential areas which most of it lies on a reclaimed shallow sea water.
- This area will be connected to the coastal line with pedestrian roads some areas were also suggested to be hotels.
- Zone (5):This area was set aside to be a high class residential area for villas and palaces with a very big park on the water side.

The planner had made no rules for the buildings heights on the cornice road but he had determined the distance between the buildings to avoid making a concrete wall along the cornice.

The planner also suggested making enough green areas & planting all along the cornice.

- The North Coast Area:

This area was basically designed to be recreational area with small residential areas. The most important elements in this area were the suggested development of Sharm Obhur coastal corridor, Fig (26).



Figures 26

This area has been divided into 4 planning zones, the planner's suggestion for each zone were the following:

- Zone (1):This area can be considered an extension for the central urban area so the planner set it aside to be a recreational area too.

He also suggested for the shallow sea water beside the "Raytheon" military area to be a shelter for immigrating birds.

- Zone (2):This area starts at the "Raytheon" area and ends at Sharm Obhur. It was almost a flat beach with a few villas and chalets. So the planner suggested to expropriate the non built areas and use them will extend and pass by the shallow sea water areas. Sailing boat piers and a very big coastal park were also suggested.

- Zone (3): Sharm Obhur it is a very unique and characterized coastal area. The planner had suggested some recreational areas on its south bank. An athletic center at the head of the Sharm and four recreational areas on the north bank including a sailing school and boat piers.
- Zone (4): It is the area lying to the north of Sharm Obhur. It includes the old palace, some buildings and a deep lake in the middle of the reefs. The planners suggested removing the old palace because of its bad condition and use the area and its lake in recreational activities; e.g. sailing boat piers and swimming areas.

The project policy for making recreational areas in all planning zones in this sector was:

To enable the public to:

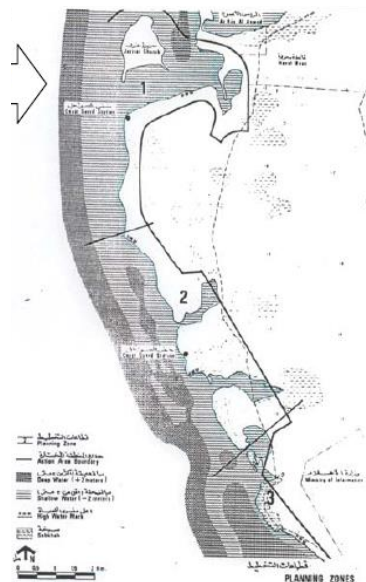
- Reach the recreational areas with their cars.
- Park their cars in special areas not on the road side.
- Sit under canopies and near their cars.
- Enjoy the sea by sitting, swimming or boating.

Offering enough services for water sports.

Providing the area with cafes, restaurants, rooms, toilets, boat centers and sailing boat piers.

- The south Coast area: Fig (26) Fig (27)

For its extraordinary beauty, reefs, islands and water depth, the south coast area was considered a very important coastal area. It was also an uninhabited area and that encouraged the planner to use it as a national and universal recreational area, Fig (27).



Figures 27

The area had been also divided into 3 planning zones. The planner's suggestion for each was the following:

- Zone (1): This area lies after the -naval bases, it was suggested to be a group of small sand beaches with natural swimming pools in the shallow sea water. For "Ghurab" island it was planned to be a nature - reserve with a national recovering area. Car- parks were also offered every 300-400M.
- Zone (2): It was suggested to reclaim the shallow sea water in this area and to build a cornice city for sports, recreational and residential uses. The city will be for 40,000 inhabitants.

It will include a sports village for 8000 persons, recreational centre and cultural centre, motor racing circuit, golf course, chalets and a small airport.

- Zone (3): This area was planned for athletic activities and water sports. The cornice road in that sector was designed to reach the parks, play ground and services building by car parks. Vacation chalets and villas were also suggested to be built in this area.

B- The present condition - the Municipality of Jeddah project:

This project divided the city waterfront into 3 zones: the Southern Corniche, the Northern Corniche and Sharm Obhur. The three zones constitute together a fully integrated series of recreational projects for the inhabitants of Jeddah to provide for them and their families sufficient and varying facilities for recreation, picnic, sport, relaxation and spending their leisure.

time. Certain parts of the cornice were also designed in two levels for both the to-and-fro directions with seats and benches scattered on its sides.

- The Southern Cornice:

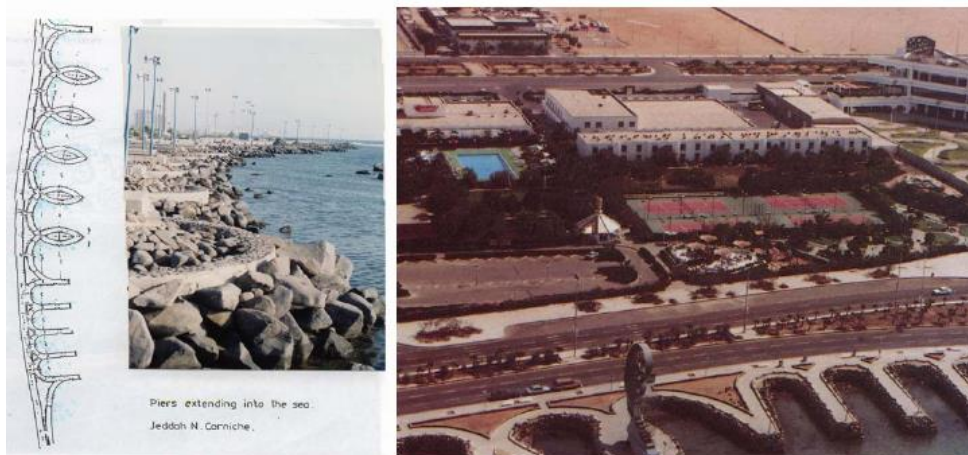
This sector of the sea-front extends for about 54KM starting south of the naval bases. It had been carried out in two stages, the first was 17KM and the second was 37KM. Most of the work entailed had been completed since the preliminary steps for reclamation leveling, paving and asphaltting the roads began long ago.

This sector includes 9 artificial lakes children's play ground and green areas but it is still not completely developed yet, so the municipality of Jeddah asked the consultant office to study the area and develop it by providing it with chalets, camping sites, play-grounds sports areas, restaurants and. cafeterias so as to satisfy all the need of its visitors.

B/2- The Northern Corniche:

It extends for about 38KM from the city center to Obhur. It includes the sea-front of the city center, Al-Arbaein Lake, Arruways area (the old harbor) and the peninsula at the Guest Palace at Al-Hamra then proceeding northwards along the coast-line. This art ea gained particular importance as it represent the most important among the recreational projects on the sea coast it also includes the facility to reach the sea-water, clean the beach and shallow-water from the sea-borne refuse and stones to enable the public to enjoy the beauty of nature in this area.

The area takes the form of special piers or promenades extending into the sea, Fig (28) & (29).



Figures 28,29

Most of the area had been paved and asphalted, provided with sea - viewing terraces and canopies, housing a number of cafes and restaurants with piers for fishing and sailing boats.

Mosques and works of art derived from the Arabic Islamic culture were also erected in certain places of the cornice. A special section is also devoted for the many works of the world-renown artists of contemporary art that demonstrates varied designs for new techniques in combining the relationship between the basic known shapes in planning and architectural arts to render Jeddah deservedly an international museum in open air, Fig (30) & (31) & (32).

In addition, there are also 14 artificial lakes connected to the sea by pipelines to be safely used for swimming.

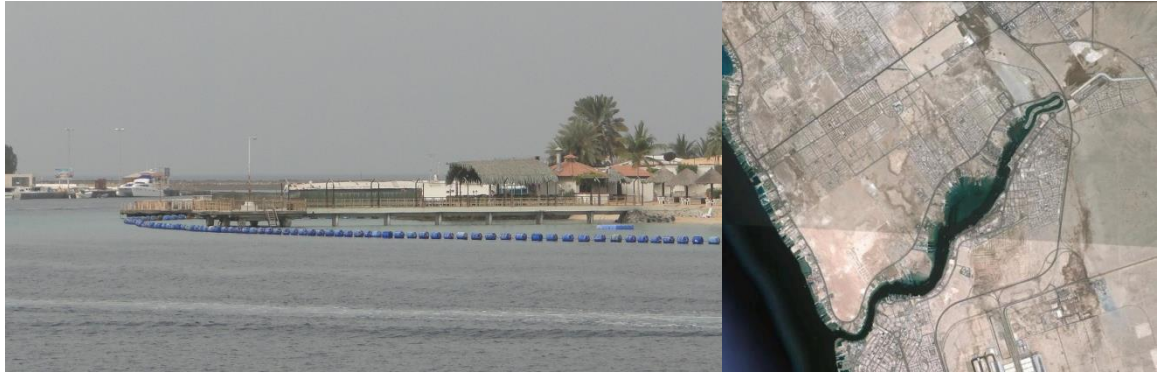


Figures 30,31,32

The sand beaches have been chosen for palms -transplanting and flower - beds are characterized all along the corniche by their different colors and varying arrangements. In addition several sets of equipment in children's play - grounds are scattered here and there along the corniche for their enjoyment and recreation. It is also planned to equip the areas all along the corniche to cater for youth and their favorite games-so the corniche is not just a lifeless stretch of asphalt but a lively beach full of life and quite different from other beaches.

B/3- Sharm Obhur:

The creek known as Sharm Obhur is the most dense and most frequented area on the kingdom's red sea coast. Its extensive blue water tempts those who seek repose and relaxation. Therefore it became the obvious facade for the recreational facilities in the city. Urban development here is subject to strict control in order to preserve the beauty of the coast-line and easy to reach with Large areas were withheld as public property to be provided with canopies and potable water so as to give the largest number of Jeddah inhabitants the opportunity to enjoy the sea., Fig (33) & (34).



Figures 33,34

The whole area is being beautified and planted at present stressing its natural scenery. Roads were built to serve both sides of the creek which were also provided with enough car parks in the public areas.

The importance of the Obhur Creek as a recreational center has greatly increased after the inauguration of King Abdulaziz International Airport. Of the important projects in the municipality development plan for the area is to build more hotels. Development also includes the littoral area extending north of the old palace overlooking Assalman Bay. It offers immense possibilities for recreational activities and water sport of different kinds.

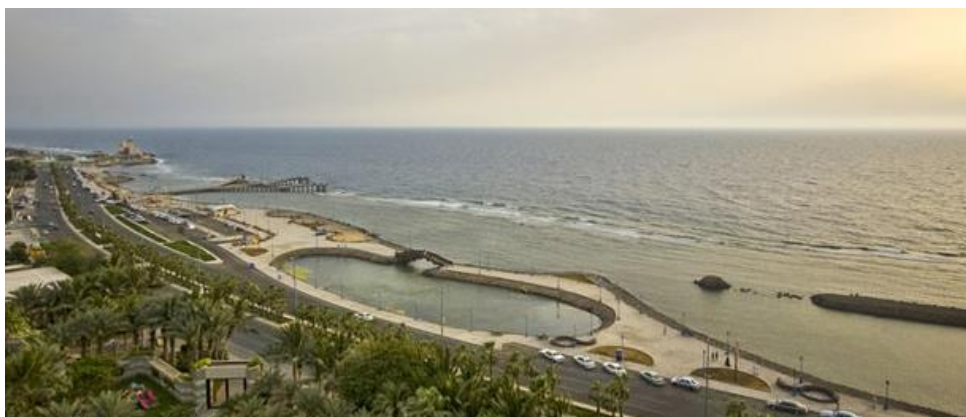
At the moment the hotels and chalets in the area are developed to encourage tourism.

The whole area will be interconnected by different means of modern transport such as overhead railways, teleferrique, ferry boats, etc.

Evaluation of the Project through the Following Elements:

Environmental Condition:

Despite that the policy of planning the corniche of Jeddah depends on passing by areas of varying depth in the sea & that was the best solution for the private properties which took most of the coastal line. But though it gave the corniche a distinguished feature, it made a very bad environmental change in the sea. Excessive work of reclaiming the shallow sea water especially in the central urban area to expand area for the central business & commercial district had killed most of the fisheries & aquatic life in the shallow sea water, Fig (35) & (36).



Figures 35,36

Sea water desalination station which lies on the northern corniche usually results in polluting the atmosphere with gases & fumes. It discharges concentrated brine after desalination requirements into the sea causing a notable change in the characteristics of its environment. The discharged water is more concentrated acidic & warmer by 5-10°C than the average lacking dissolved oxygen & containing more copper & iron than the normal sea water receiving it.

The traffic condition:

The corniche of Jeddah was planned to have an organic shape. That shape will make it easy for cars to reach the recreational areas & also encourage car drivers to reduce their speed. The corniche was also planned to be a recreational road which dose not get affected by the city traffic except in the area lying south of " Sharm Oahu " where the residential district is located, were the corniche serve as a collector road too.

Beautification:

The plan to beautify Jeddah & its corniche began in frame work of several very important factors, i.e. no impersonation or contradiction with the Arabian culture.

About 360 pieces of sculpture are now distributed in the corniche of Jeddah. They are well lit at night & the impressive view is not obliterated by the surrounding greenery. The open air museum on "Al Hamra" corniche won the Arab 1983 prize for art coordination, Fig (37).



Figures 37

Recreational Facilities:

The municipality of Jeddah had made best use of its available resources in long extensive shore line which enabled it to establish a large number recreational facility.

It established several facilities for sports clubs, youth welfare sports centers, & children play grounds & green areas especially in the northern corniche but the southern corniche still needs many recreational facilities, Fig (38).



Figures 38

Services & Utilities:

The project had established many restaurants, cafés, car parks & other services & utilities which make it easy for the people to enjoy themselves but now and because of the great number of people who use the recreational area on the corniche these services & utilities become insufficient in both of the Northern & Southern corniche.

The connection between the city main arteries & the corniche:

The connection between the corniche and the city main arteries was planned to be circular squares at the road interchange. They are planned and beautified by pieces of sculpture. But the plan gave no priority and importance to the special arteries which leads to the city's focal points & landmarks like the historical area for example, Fig (39).



Figures 39

The Architectural Character of the Waterfront:

The waterfront of Jeddah has a very special architectural character represented in its buildings shapes, heights & white color all along the corniche except in the central urban area. The plan had ignored the unique architectural character of the historical area by establishing modern commercial high buildings which have completely hidden the identity of the historical area, Fig (40) & (41).



Figures 40,41

CONCLUSIONS:

Evaluation of waterfront development policies:

After the previous analysis & evaluation of the two waterfront development and their policies, the negative & positive points of them can be summarized in the following:

Elements	Policy	Remarks	V.G.	G.	P.
Environmental condition	(1)	This policy almost dose not cause any environmental problems in sea water because it dose not depend on reclaiming the sea water.	★		
	(2)	This policy makes the corniche road passing by different areas in the water so excessive works of reclaiming it has caused a very bad environment change in the sea & killed aquatic life.		★	
The traffic condition	(1)	The continuous and straight course of the corniche road in this policy encourages the city traffic to use it neglecting its recreational function.			★
	(2)	The organic and long course of the corniche road in this policy not encourages the city traffic to use it and force car drivers to reduce their speed which make it a safe recreational road.	★		
Beautification	(1)	The continuous course of the corniche road in this policy which is parallel to the coast line gives a repeating motion perspective which needs to be varied by work of arts.		★	
	(2)	The organic course of the corniche road in this policy and its passing by different depths in the sea gives the waterfront a unique beauty. With works of arts provided along if the waterfront can be extra ordinary beautiful.	★		
Recreational facilities	(1)	It can be distributed continuously all along the waterfront.	★		
	(2)	It can be also distributed continuously all along the waterfront, but with the variety of using the corniche artificial lakes for recreational uses.	★		
Recreational facilities	(1)	It can be distributed continuously all along the waterfront.	★		
	(2)	It can be also distributed continuously all along the waterfront, but with the variety of using the corniche artificial lakes for recreational uses.	★		
Services & utilities	(1)	It can easily be distributed all along the waterfront.	★		
	(2)	It can also easily be distributed all along the waterfront.	★		
The connection between the city main arteries & the corniche	(1)	The connection between the corniche road & the city's main arteries which leads to the city's focal points is considered continuity for the city recreational circulation but those connections may encourage more of the city traffic to use the corniche road.		★	
	(2)	In this policy that connection also considers continuity for the city recreational circulation & will increase the importance of the waterfront as a recreational area.	★		
The architectural character of the waterfront	(1)	The corniche road is almost parallel to the coast line & most of the waterfront buildings, which deprive the enjoying the architectural character of those buildings.		★	
	(2)	The corniche road is extending & passing by area in the sea which gives a good chance to enjoy the architectural character of the waterfront buildings from a considerable distance in the sea.	★		

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