

# THE ARCHITECTURE OF WATERFRONTS, CASE STUDY: THE CITY OF ALEXANDRIA

N.A. Zaki and A.G. El-Adawi

Department of Architecture, Faculty of Engineering,  
Alexandria University, Alexandria, Egypt.

## ABSTRACT

This paper will focus on the characteristics of waterfronts and considerations to be taken when proposing treatments for them. The study will proceed to give an analysis of Alexandria's waterfront, as a case study, after giving a hint on its historical background. Finally, recommendations are suggested for consideration when a redevelopment of its waterfront will take place.

## INTRODUCTION

The water edge is where life is most diverse and unique. Although the experience at this edge may exist at many scales, in different latitudes, within different geographic zones, it evokes the same magnetic response. It is at the water edge that man is closest to the intuitive spirit that represents life itself.

From the river to the lake, from the estuary to the ocean the interaction of man and this edge has been the basis of a special relationship. It is the lure of the water, its sparkle, its reflection, its endless movement and change that both captures man's imagination and provides a variety of opportunities from business to recreation, from active to passive activities [1].

Waterfronts vary enormously in type and character, as well as in size and age. "Urban waterfronts" is taken to mean the port areas of large metropolitan regions on coasts or major rivers.

An accelerated trend toward spatial segregation between ports and traditional urban waterfronts is recognizable in many port cities around the world. This phenomenon results from two parallel developments, one related to technological and logistical changes in maritime transportation, and the other motivated by attitudinal changes on the part of the public toward the waterfront. Both factors acting simultaneously and sequentially are responsible for changing the characteristics of the landscape of traditional urban waterfronts. The unique atmosphere of an active coastal port and ocean waterfront devoted almost entirely to shipping and maritime trade is gradually fading. The spatial separation between the port and the traditional waterfront has become obvious. Many urban waterfront areas are occupied with port-related activities, rather than active port operations. The urban waterfront is gradually changing its character as new land uses penetrate the area. The waterfront area is becoming

more accessible and attractive to the public as maritime museums, aquariums, restaurants, waterfront parks, and marinas [2].

## CHARACTERISTICS OF WATERFRONTS

Among the many factors that contribute to the unique character of each waterfront which must be taken into account when examining redevelopment possibilities are:

1. *Geographic location*: This affects very much the architecture and type of construction. Buildings overlooking the northern coast of Africa differ from buildings on the waterfront of Kuwait or New York, etc..

2. *Size*: Differences in size affect strategies of urban waterfront revitalization. Waterfront sections can be compact, neatly carved out of one section of a city or town, or they can sprawl for many kilometers.

3. *Scale*: The redevelopment could vary vastly in scale. It could be as small as the replacement of a boat-launching ramp, or as large as redeveloping a large area [3].

4. *Heritage*: Many waterfronts contain historic structures or uses. This can help tourism. The maritime heritage of old seaports and ships has sparked renewed public interest. Historic preservation is a force which raises issues for new uses of waterfronts and all that historical preservationists seek for, are people to come to enjoy and see [4].

The pattern of existing land uses on a waterfront is important in determining future redevelopment. That pattern can easily pose problems. For example, historic use on a high density industrial area makes conversion to residential and commercial uses a complex task, especially if the area has an unsavory reputation.

5. *Use*: Many waterfronts are heavily industrialized,



reflecting either current activity or the past port-related functions. Other waterfronts, however, may be exclusively resort communities with harbors for pleasure crafts and perhaps commercial fishing vessels. More commonly, waterfronts reflect a mixture of uses [3].

## WATERFRONT TREATMENT

Any successful treatment of an existing waterfront must put into consideration the following:

a. *Theme*: Establishing a successful theme will control future spatial analysis, land-use, materials, scale and meaning. Frequently, initial stages of design are referred to as "thematic" rather than schematic. It is at these stages that the project's romantic aspect will or will not be realized.

The theme is determined by several factors:

1. Response to climate, as the layout, design of land use, of a development in a cold region will be quite different from that of a warm region, although the basic function will be the same.
2. Delineating the special element about the project's culture and history.
3. Establishing a reason for people to return to the water's edge, showing them potential uses in a very personal way [1].

b. *Image*: The image gives the visitor a perception of the project before coming to the waterfront and forming an opinion. This could be achieved through the following:

1. Establishing a theme that will move people to meet their expectations of what waterfront should be or recapture what it was, and that will lead to its new image.
2. Developing a broad range of ways to respond to a wealth of desired activities, from boating to sitting and people watching.
3. Giving attention to details. Will visitors sit on an iron or wooden bench? Should furnishings be contemporary or historic [1].

Research should provide the theme, assemblage and materials should create the image.

c. *Authenticity*: A waterfront that is alive with water-dependent activities is the basis for an authentic and enjoyable experience. Long looked upon as negative, adjacent industrial function can offer interest and

education to the visitor. A restaurant in San Francisco, for example, announces the name, tonnage, cargo and port of origin of each vessel passing by, bringing the excitement of far off lands to the dining experience. The authenticity of the image will be based on historic documentation, and the success or failure of the project to respond to the community's concern. Pascagoula, Mississippi is a center for fishing industry and for ship building, and is surrounded by barrier islands. Prior to waterfront development there was no place to walk, sit, or eat at the water's edge, although historically an accessible area existed. Research was conducted on this scale, with details, image and architecture of the old waterfront [1].

d. *Functions*: No matter how unique or exciting a waterfront development is, it will be a success only if it functions well on all levels. From regional access and circulation, to ease and comfort of pedestrian movement, to the visitor's overall experience, all levels must sequence successfully as well as meet capacities on peak activity days. It is important to look for ways to provide the necessary spatial envelop while creating a total environment with multiple use capabilities.

The plaza that can be used for concerts may have access steps that can be used as amphitheater, or a gathering area might be able to accommodate a fisherman's market in the morning, a flower boutique in the afternoon and concert at night.

Opportunities to eat, drink, people watch or simply sit and relax are essential to a successful waterfront development. The shops of commercial facilities will be only as successful as the "free" experience component outside. Programming for these outside areas is also crucial.

## ALEXANDRIA, A HISTORICAL BACKGROUND

Alexandria, founded in 331 B.C., was a unique port city, and achieved importance in the Roman world, second only to Rome, bringing the grandeur of harbour and urban water front. Planned by the Macedonian architect Deinocrates, it was built on the site of an ancient Egyptian settlement lying between two natural harbours. One harbour opened into the Eleusinian Sea and had been a harbour since 3000 B.C.. The other extended into the center of the city as an inlet from Lake Mareotis with access to the Nile. The planning axes of Alexandria consisted of two avenues, sixty one meters wide, lined with

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marble columns. One extended from east to west, from a canal extension from the Nile to another canal linking the lake to the sea. The other, north to south, extended from the lake to the port, accessible from the Mediterranean. The latter consisted of a double harbour protected by the island of Pharos. The forum, the royal palace, a temple, theatres, a gymnasium and a library were located on or near the waterfront, and the harbour was identified by the 146 m. high Pharos (Lighthouse). The public building on the waterfront provided not only an impressive harbour panorama, but also continuity between harbour and the business life of the city. Of course nothing of Greco-Roman Alexandria remains today, but the significance of the quayside buildings and relationship between civic spatial planning and the waterfront embodied the principles for a port city [5].

#### ALEXANDRIA, ANALYSIS OF THE CITY TODAY

Alexandria is a linear city, situated between the Mediterranean Sea to the north and Lake Mareotis to the south. Its urban waterfront extends from Abou Quir east to the Eastern Harbour, then from the Western Harbour to Agamy on the west (Figure 1).

1. *Beaches and shoreline*: In the same previous sequence, the beaches are located all along the waterfront. The study will focus on the area from Montazah east till Quaitbey castle west. In summer months, the human element dominates the seafront, whereas in winter, when the beaches are deserted, the sea in its changing mood, dominates.

2. *The Edge*: The edge, where land and water meet, is now continuously changing in the direction of the land. This is an effect of the High Dam, which deprived the beaches of the silt deposits which prevented their erosion. In consequence, the area of sandy beaches is decreasing very rapidly, despite the efforts made to pipe sand in some areas, such as Stanley and Silsela, to keep the area. In other places, such as those of the east harbour and the area between Stanley and Saba Pasha, the traditional concrete blocks are still being used.

3. *The Seawall*: The seawall itself, as an interface between the land and the force of the sea, has always provided a point of interest. Recently, this beautifully built wall was renewed, but the result was terrible because of an inaccurate finishing of plaster.

4. *Promenade and shore drive*: The Promenade (being only a sidewalk) and the shore drive run parallel to the

shoreline; from the east of the city to its west. Unfortunately, the presence of a lot of cabins by the shore above eye level blocks the view of the beaches in the majority of locations. This is the case even where some of the cabins were re-erected and raised above the street level. In some cases, as in Abo Heif beach, the space below the cabins, that was to permit viewing was later built up shutting off the glimpse of the sea completely. To make matters worse a number of beach clubs have been built, in the area between Roushdy till Sidi Gaber, which obscure the view of the sea completely, especially when you consider the type of buildings they use. The only area left unused on this promenade, is the one in Saba Pasha, and it is one where no beach actually exists, and where one can feel free to walk up from St. Giovanni's El Saraya to Glym with no obstruction to the view even of roofs of cabins. Recently, this area was divided amongst a group of syndicates, which started to build its own huge beach clubs, not paying any consideration to how the architecture of waterfronts should be. Approaching the downtown area from Shatby, the situation is fine for pedestrians' viewing; still from Silsela downwards, the parapet height is raised to an extent that car drivers cannot enjoy viewing the sea at all.

5. *Buildings*: On the landward side of the shore drive, the structures that face the sea are high-rise buildings that shut out the space beyond the shore drive, which is in turn filled with building blocks. This has altered the micro-climate of the areas in hinterland. In an area like Kafr Abdou, Roushdy, which has a natural topography high above sea level, residents started complaining about it getting warmer with no breeze reaching the area; a change from what it used to be before all these high rises were erected. This is the result of actions taken in the seventies by the private sector, where properties with nice villas were sold, regardless of their architectural value, and replaced immediately by ugly high-rise buildings for economic reasons (capital forming) and to meet the housing crisis.

The relationship between waterfront and buildings is fundamental to design cohesion. In our case it is just a barrier that completely separates the shore and the hinterland.

6. *Architecture*: All along the waterfront, buildings have different architecture, with no regard to any regulations concerning floor height. The result is buildings that are in agreement with the maximum allowable height, but the individual height of stories in different buildings is in

Fig. (1) Map of Alexandria

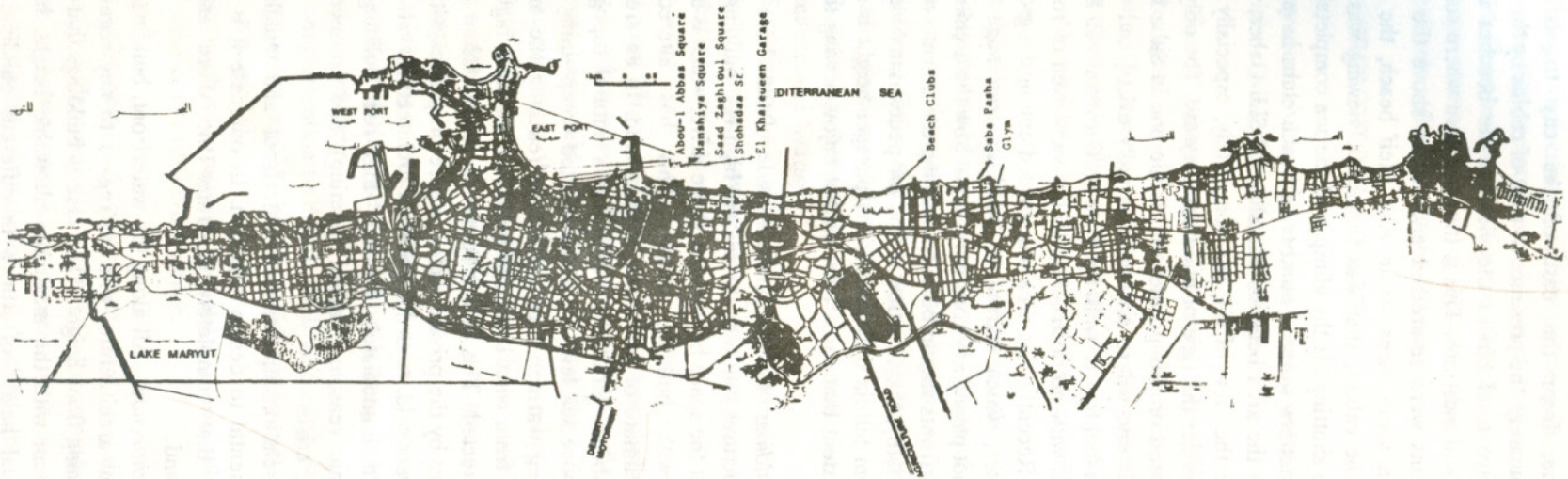
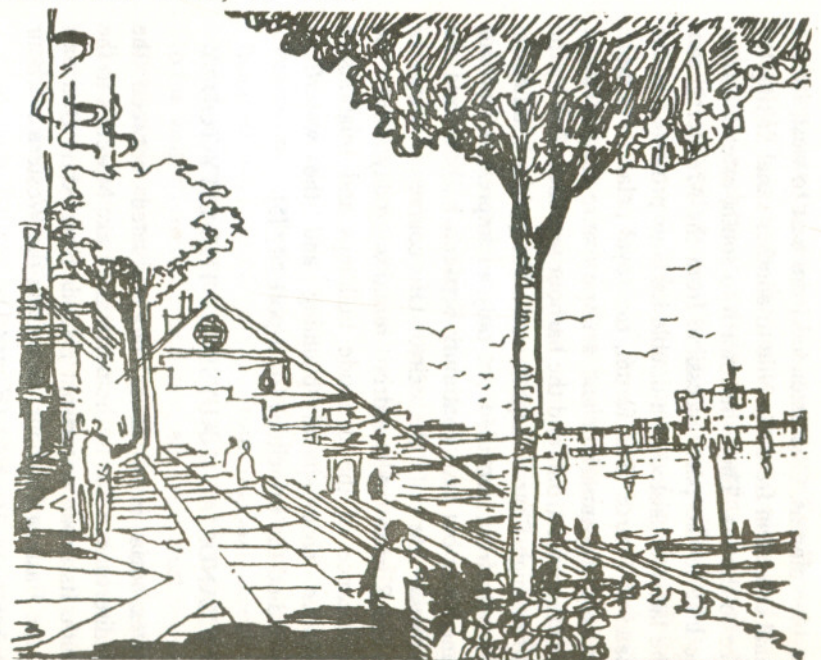
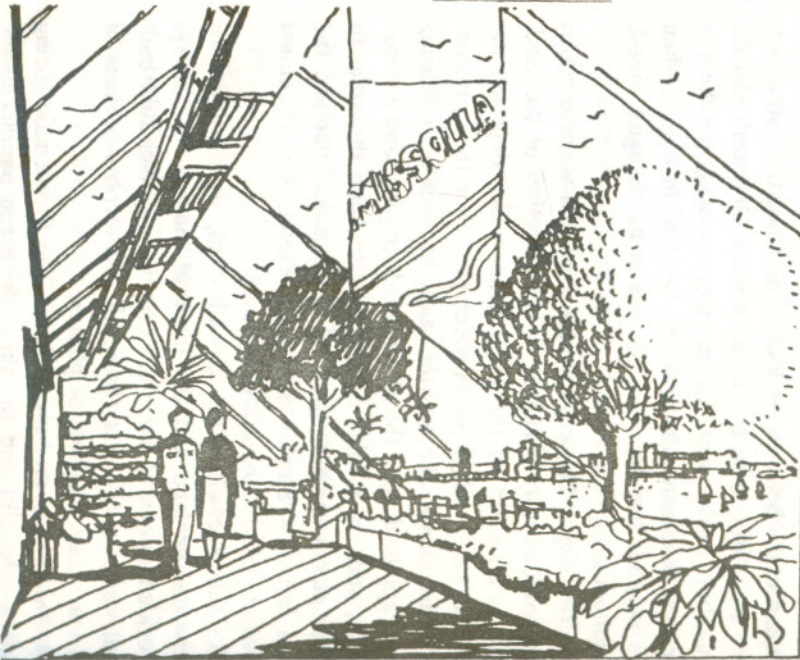


Fig. (2), Fig. (3):

Missoula River Front, Adapted from L. Azeo Torre, Waterfront Development, Van Nostrand Reinhold 1989, P. 141.



ete repulsion with one another. This is also the case  
 nishing materials, their quality, and colour. In short,  
 gs stand with no relation to their surroundings. This  
 the case with the older buildings from the  
 een Garage down to the Qaitbey castle.

*Historical Buildings:* What is actually meant here are  
 gs with historical background or buildings with  
 ctural value which need to be conserved. Starting  
 he west of the waterfront, there is Qaitbey Castle,  
 though recessed a little bit, there is Abou-l Abbas  
 e, the monument of the Unknown Soldier, Quaed  
 m Mosque. Building with architectural value are  
 grouped from El Khaledeen Garage till Ramleh  
 a, and then from Cecil Hotel up to Shohadaa St..  
 are mostly the Italian influenced buildings, built in  
 920s. Then, there is the University Administration  
 ng, originally a church, and St. Mark school which is  
 uated directly on the waterfront, but recessed and  
 learly.

*Skyline:* Not only did the high-rise buildings destroy  
 waterfront's edge, but also no regulations or controls  
 adopted regarding height. Thus the result was an  
 hanging skyline with no underlying concept. The only  
 hat has maintained its harmonious skyline is the  
 n harbour area, starting from Saad Zaghoul square  
 aitbey castle. Even this was disturbed by the  
 ce of the new office building overlooking the  
 rial of the Unknown Soldier and the new complex  
 court building.

control, if it were exercised on the height of  
 gs, could have provided a fine grain skyline, or even  
 rse one reflecting a good image when seen from  
 nt areas.

*Movement:* the traffic imposed on the cornich destroys  
 relationship between the buildings lining the cornich  
 and the beach and obscuring the role of the  
 gs. It has even become very risky to cross the road  
 beaches because there are very few traffic signals  
 hole length of the cornich. The density of traffic is  
 ntly increasing, such that the direction of traffic is  
 ed twice daily from Sidi Gaber to Shatby Hospital.  
 situation becomes dangerous at peak hours with  
 flowing in from roads perpendicular to the main  
 a that section of the road. Motor vehicles have also  
 e a visual intrusion.

*Open Spaces:* These are very limited. They exist only  
 t of Abou-l Abbas mosque, Manshiya Square, Saad  
 ul Square, El Khaledeen Garage, and Shatby in two

sites, the tombs in front of St. Mark and the Sanitary  
 Station. Still, such open spaces are separated from the  
 promenade by the intrusive nature of moving traffic.

11. *Uses:* Except for a few hotels the majority of the  
 buildings are residential. Such hotels are concentrated  
 downtown; e.g. Cecil. In other areas are the El Haram,  
 Mecca, Plaza, San Stefano, El Mahrousa, Ramada, and  
 Sheraton. Downtown, the ground floor is mainly  
 restaurants and cafes, and the upper floors house  
 administrative offices and clinics. This is the case with  
 buildings from El Khaledeen Garage to Shohadaa street.  
 Few public buildings appear on the building line. Among  
 those are the Court building in Manshiya, Kasr el Qotn,  
 French Consulate, Italian Consulate, W.H.O. building,  
 University Administration, and Somed petroleum company  
 building, and also two theaters, one in Shatby and the  
 other in Mostafa Pasha.

12. *Street Furniture:* Long ago, seats on the corniche  
 were of two types, wooden and terrazzo. Both were very  
 nicely designed and were comfortable to use. These have  
 been replaced recently by some metal and wooden ones  
 which are poorly proportioned causing one's legs to be off  
 the ground when sitting on them. Litter baskets have  
 practically disappeared from all sites. Signs, whether  
 bearing names of beaches or names of districts are badly  
 designed.

No green areas exist whatsoever the whole length of the  
 waterfront. But, in the area of the Eastern Harbour  
 starting from Manshiya, old gracious palm trees exist,  
 some trees appear at the French Consulate, and some  
 palms around the W.H.O. and Quaed Ibrahim Mosque.  
 Also, the Selsela itself has some trees, otherwise the  
 waterfront is very bare. Some trials were made for  
 planting but they were a failure.

Lighting is inadequate in some areas along the  
 promenade, and even the design of lighting posts does not  
 suit the waterfront.

## ALEXANDRIA: A REDEVELOPMENT OF ITS WATERFRONT

Redeveloping an area of an approximately 20 kilometers  
 long, with existing sea features, requires a delicate  
 treatment in order to achieve strong architectural features  
 while preserving the qualities of urban fabric and its  
 waterfront. To realize such an aim, certain special  
 problems and certain public policy issues inevitably arise.  
 Among these are problems and issues dealing with

environmental questions which require technical engineering solutions. Others are design issues involving both aesthetic considerations and day-to-day functions. Moreover there are the basic public issues; the question of for whose use is this waterfront being developed, and who will pay for it?

Among the environmental problems which could arise are those related to water quality, coastal conditions and marine life protection, ground water table, especially in those areas where solutions offered would involve excavating underground. Such solutions are often costly.

The design issues become more complex. The public as a client does not respond very well to design until they have used it. The public responds with its feet. It comes and uses it or it doesn't.

Local residents usually become concerned when the visiting population threatens to overwhelm the physical capacities of local facilities in summertime. This has been a source of irritation between visitors and natives in all resort places.

Increased interest in waterfronts is often accompanied by a corresponding increase in property values. This means that most suggestions for renewal redevelopment or other investment in waterfronts may run into controversy. Public interest groups will want greater access and more space for recreation of one sort or another. Private property owners will naturally want to maximize return on investments that they might be contemplating. Anyhow, conflicts among varying interests over what use to make of waterfronts can be intense. Ownership of waterfront land may be more tangled than in other sections of a community; since government holdings of waterfront territory are limited.

One of the major issues is to produce a detailed Master Plan for the entire waterfront, with new zones for recreational, leisure and cultural functions, as a means of returning the shoreline beyond the corniche road back to the people, where the existing buildings had presented a barrier as mentioned before.

To make this feasible the whole plan could be divided into a number of phases which could cover short-term periods or long ones of about 50 years or more; first in order to be realistic concerning the existing residential buildings all along the waterfront and their depreciation time, and second, to show the role of both public and private sector. The public sector should make the long term plan for the entire waterfront, and the private sector fulfill its role within this framework.

Starting with the beaches, it could be redeveloped with easy access from the other side of the road, as there are existing pedestrian tunnels in some areas. The cabins could be redesigned to be grouped in some areas, giving them adequate heights without obscuring the view all along the corniche. In this way, space is given for more facilities and activities. Beach clubs should be removed completely from their places and attention should be given to the new designs so as not to exceed eye-level and that will be only achieved in areas where the street level is high enough above the shore level.

One of the major tasks will be to stabilize the edge where land and water meet. This battle for stabilization has been going since man first sought to develop and create life directly at the water edge. Amongst many types and techniques, pressure-treated wood was found to be the most cost-effective material to use. It has been used on properties exposed directly to salt, now starting their third decade and is still in perfect shape [4].

The seawall could be replastered with care to regain its old shape, taking into consideration giving it a suitable height, as it is used for sitting whenever this is convenient.

Concerning the skyline, attention should be given to the new buildings in the hinterland so that a situation that exists now with Abou-l Abbas Mosque could be eliminated, where its skyline with its four domes is not clearly seen anymore from many locations due to the new buildings behind it, while it was clearly identified till three years ago from far points on the waterfront like Glym. Unity should be given to colour and finishing materials of the buildings of the waterfront with a permanent scheme for good maintenance.

In areas starting from Selsela down to Qaitbey Castle, where the existing parapet of the corniche is raised above eye level for car drivers, the surface road could be substituted by tunnels, despite the ground water table in this area and consequently the very high cost of erection, thus integrating a promenade with the hinterland in designated areas, such as Saad Zaghloul Square, Manshiya Square, Abdou-l Abbas Mosque, and the area before the castle. In such areas new developments could be achieved with a variety of interrelated activities to the waterfront and immediate surroundings, where facilities, events, services or in other words 365 days of activities reconstitutes these spaces as focal points in the life of the city, restoring its maritime origin. From mimes to music, fireworks to laser displays the waterfront could be programmed for daily events with attention given to



planning for special events and holidays, waterfront festival, seafood festival, ethnic festivals, parachute jumps, fishing piers, and so on. These events could draw more people to the downtown area's water edge, which would create a greater awareness of this special environment and the city's cultural legacy.

Boating can add to the community's waterfront, so enough boat slips could be added, or full service marinas, and this could be easily achieved in Selsela, or East Harbor. The redevelopment will create very well planned piazzas and promenading spaces, which will be able to maintain and incorporate life of the resort community.

Ceremonial steps could be introduced with floating stages for concerts, performances and public events, or even projecting platforms over the water, also terraced pavilions, with shops and restaurants, Figures (2) and (3), kiosks and vendors, small parks, and plazas with sculpture could also be introduced. Motor vehicles would not be permitted to dominate the promenade, but underground parking garages could be provided. The pace of life at such areas could allow for leisurely transportation, which could be an interest in itself. The horse drawn carriage could be seen strolling like older days in this area, without causing troubles to the pedestrians, which are given the first priority.

Buildings of architectural value as those mentioned above could be conserved while providing other uses for them, like hotels, accommodations for boat owners, shopping malls, science centers, museums, cultural centers, exhibitions, etc.

In areas near historical buildings like Quaitbey Castle, or Abou-l Abbas Mosque the shore drive could be changed into a civic promenade for people to enjoy the advantage of location close to the city center and enriched by historic connections.

Street furniture should be given great attention and good designs, starting from benches, signs, lighting posts, litter baskets, drinking fountains to floor patterns, kiosks, etc.

Integration of newly introduced natural features such as plants, shrubs and trees is a must. This should be distributed all along the waterfront, at the same time choosing those suitable which could withstand the climate and seasonal conditions of the waterfront. One should recall the successful situation of Montazah Palace and Mamoura, where trees and plants have survived for more than half a century.

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