Abstract

Today, studies on urban coastal areas, is increasingly attracting more interest from academics and urban managements and becoming the main theme of the planning. Regarding the planning and the sustainable development of coastal areas, natural landscape, protection and development of historical and cultural values, natural environment friendly planning and design are very important. Sustainability emerges as a dominant paradigm in the world’s coastal management programs and in planning coastal areas towards the end of the twentieth century. All over the world, planning for the development of coastal areas, design and ecological shortcomings are emphasized significantly in the literature. In this context; the failure to provide the integration between urban and coastal areas and functional deficiencies in the use of coastal areas, differences in planning approaches in the development of coastal areas, the formation of copy places and disregarding the local characteristics, uncertain ecological concepts, errors in the choice of the use of coastal areas during the design phase, failure to establish a healthy transportation system, lack of management, absence of a flexible approach in terms of sustainable development in planning and design are the issues that attract attention. Additionally, sustainable approaches to the planning of coastal areas in recent years, constitutes a coherent framework by creating strategies and policies that include the features of the coast, demand for use and resources. Also, waterfront design guidelines prepared in order to implement the planning principles design tools that are successfully applied by many countries. This study discusses the sustainable planning in coastal areas and aims to examine waterfront design guidelines applied in countries including USA, Canada, UK and Australia, evaluates the forefront design principles of coastal areas and develop suggestions for Turkey. Our study is expected to give a new and important perspective to the planning and implementation of coastal areas in Turkey.

Keywords: Sustainable planning, waterfront design guidelines, waterfront developments

1. Introduction

Sustainability, in the world’s coastal management programs towards the end of the 20th century, emerged as a dominant paradigm, and accepted as the main subject that has to be focused on regarding the planning and design of coastal areas [1]. Today, land use planning and sustainability in coastal areas subjects are more integrated than ever and ideas, principles and policies regarding sustainability are increasingly gaining importance [2].

Developments in the coastal zone management and planning in 1960s and 1970s usually created solutions to urgent problems in coastal areas and coastal development has experienced the increasing effects of the management planning process, especially during 1980s and 1990s. [1]. Developments in the coastal zone management and planning in 1960s and 1970s usually created solutions to urgent problems in coastal areas and coastal development has experienced the increasing effects of the management planning process, especially during 1980s and 1990s. In the early stages of the planning process, rational planning model has been applied. In the rational
planning model in which the issues, goals and objectives, possibilities and limitations are defined and the alternatives are determined; making choices among the alternatives and their application generally vary depending on the jurisdictions of the participants. And since the beginning of the 1990s, an accommodating planning model is used in the planning of coastal areas in many developed and developing countries and this model have become widespread in Europe. Today, for the successful coastal developments, a sustainable planning approach in which public and private interest groups located in the area, non-governmental organizations and public is added to the planning process and depends on interaction and a common consensus is accepted as a prerequisite [3, 4, 5, 6, 7, 8, 9, 10, 11]. Waterfront design guidelines prepared in order to implement the planning principles design tools that are successfully applied by many countries.

This study discusses the sustainable planning in coastal areas and aims to examine waterfront design guidelines applied in countries including USA, Canada, UK and Australia, evaluates the forefront design principles of coastal areas and develop suggestions for Turkey.

2. Literature Review

In 2000s, the basic principles for sustainable urban coastal development all over the world determined with The Conference on The International Center Cities on Water found in the literature are as follows [12]:

1. The protection of the quality of water and environment as a precondition for all coastal developments and local governments taking the responsibility in this regard,
2. Considering the coastal areas as an integral part of the city and designing them by developing functions which will contribute to the city’s vitality such as transportation, entertainment and culture,
3. In the sustainable development of coastal areas, protection of the historical identity and the industrial past, and organization of the urban activity,
4. Giving priority to having access to the commercial and mixed uses such as culture, trade and housing and to water,
5. Making the public access to coastal areas a prerequisite,
6. Planning the new coastal development in public-private partnerships, inclusion of private investors in the planning process from the beginning to provide market information and accelerate development, public administrations ensuring the quality of design and infrastructure and protecting the public balance,
7. Providing benefits from the cities’ sustainable coastal developments not only in economic and ecological but also in social terms,
8. Coastal area master plans being based on the detailed analysis of meaning and functional principles that the coastal areas contain, flexible, able to adapt and having the features to include all related disciplines,
9. Involvement of professionals from different disciplines in the redevelopment of coastal areas and the establishment of a network to ensure the exchange of information in the planning process.

Deficiencies regarding planning, design and ecology in the development of coastal areas in the world are significantly emphasized in studies focusing on the subject [5, 13, 8, 12, 11]. In this context, the failure to provide the integration between urban and coastal areas and functional deficiencies in the use of coastal areas, differences in planning approaches in the development of coastal areas, the formation of copy places and disregarding the local characteristics, uncertain ecological concepts, errors in the choice of the use of coastal areas during the design phase, failure to establish a healthy transportation system, lack of management, absence of a flexible approach in terms of sustainable development in planning and design are the issues that attract attention and the importance of the sustainable planning of coastal areas are emphasized.

Sustainable planning of coastal areas, constitutes a coherent framework by creating strategies and policies that include the features of the coast, demand for use and resources [1]. Therefore, a well designed coastal planning process, while it preserves a series of options, allows managers to make decisions in the direction that they want. In this process; especially defining the coasts, determining the future role of the coast for the city, the preparation of the master plan and the inclusion of the community and investors at an early stage, promoting physical and economic conditions for the renewal of the coast, establishing a balance between the economic expectations of investors and the public interest, addressing and reviewing the master plan in such a way to reduce the financial risks and respond to the changes in the market, the prioritization of public access the coast, integration of the coastal area with the city, determination of the design principles by considering the natural, historical, cultural and architectural values are the important subjects [3, 4, 5, 6, 7, 8, 9, 10, 11]. Also, waterfront design guidelines prepared in order to implement the planning principles design tools that are successfully applied by many countries. Examining the common point of these urban design guidelines from different countries and cities; the provision of coast-city integration, public access and public uses, developments and activities regarding water, sustainable development, authenticity and identity, harmony with the natural environment, public-private collaboration in the development, continuity, readability, comfort, diversity, safety, livability, flexibility, landscape features become the prominent subjects.
3. Waterfront Design Guidelines


Barry Waterfront Design and Access Statement was prepared by The Vale of Glamorgan Council in 2009 in order to determine the principles of the development of waterfront and these principles is intended to create a basis for the waterfront master plan (Figure 1). For the success of the planning process; it is explained that mixed land use, water use, progressive development, integration, sense of place, community pride, sustainability, design quality, movement and accessibility subjects have critical importance.

In the process of identification of design principles of waterfront; waterfront is separated into different character areas and goals and objectives are determined for each area and detailed design principles are developed in uses and mix, layout and urban form, scale, height and massing, appearance, materials and design features, public realm and public open space subjects. In this respect; access and movement, public open area designs, sustainability, continuity and closure, readability become the forefront subjects (Figure 2). In this context; while adopting an understandable and navigatable waterfront, formation of new spaces and landmarks for improving the readability, designing the public squares and the public art as the focal points of the waterfront and the integration of these reference points with pedestrian and bicycle paths, the formation of lawn space for special events and festivals, the provision of sitting possibilities for everyone in the waterfront and open spaces principles, it is emphasized that water is an important asset and an attractive item, and the importance of using the recreational potential of the waterfront for public use is addressed. Also, creation of open green space and artistic focus points along the waterfront corridor are recommended.


In 2011, Daedalus Waterfront Design & Access Statement was published in order to improve design principles of Daedalus Waterfront Site in Hampshire by South East England Development Agency [15]. The Daedalus Waterfront masterplan is based on a number of key principles which relate to the aspirations and objectives for the site. The key principles are as follows:

- A lively place (restore and enhance under-used heritage assets and their settings, complemented by high quality new development; provide new employment space to ensure the longterm success of the local community and to reduce out-commuting from the Gosport Peninsular; promote the Waterfront as a place to live and work, with a range of house types to create a mixed and sustainable community; ensure the Waterfront provides a range of facilities which benefit the wider business and residential communities),

- A high quality place (provide public access to the Waterfront for the first time since the First World War; foster a distinctive identity for the Waterfront based on its heritage, through the careful restoration of existing buildings and the creation of high quality new buildings; create a legible community where routes are easy, accessible, convenient and readily identified; integrate the Waterfront into its wider setting; create new public spaces as a focus for activity, recreation),
A sustainable place (promote sustainable development, including the highest standards of energy efficiency in buildings, ensure the Waterfront is accessible to all by all types of transport, including bus, taxi, community transport, walking, cycling and the private car; enable pedestrian and cycle priority throughout the site; provide an appropriate level of car parking; provide a movement strategy which avoids conflicts between different users).

General framework of Daedalus Waterfront Design & Access Statement constitute design principles, inclusiveness, land use, amount of development, built form, socio-economics, transport, heritage, open space, drainage, implementation & phasing, sustainability issues (Figure 3, Figure 4).

For the definition process of waterfront development principles, waterfront divided different character areas and for each area general character, land use, building scale, form and heights, building texture, public realm, access and parking were analyzed. Furthermore, concerning to Daedalus waterfront site specific, more detailed design principles were improved related to sense of place, flexibility, secure by design, building plots, conservation area, public realm, planting types issues (Figure 5).

3.3. Port of Los Angeles Waterfront Design Guidelines-USA (2011)

LA Waterfront Design Guidelines which is prepared for LA Waterfront of the Port of Los Angeles by Los Angeles Board of Harbor Commissioners in 2011, adopts the following basic principles for the sustainable development of waterfront [16] (Figure 6):

- Emphasizing the importance of Port of Los Angeles, Wilmington, and San Pedro settlements in the past, present and future,
- Design of an integrated coastal zone with public places integrated together,
- Realization of a world-class design that will strengthen the regional identity of the port,
- Revitalization of Wilmington and San Pedro settlements and the introduction of commercial activities along the waterfront,
- Creation of a sustainable pedestrian path confirming that the waterfronts are public resources.
open space (parks, plazas, landscape elements and plant materials), site furnishing (paving, walls, fences and railings, bollards, public art, water features); ARCHITECTURAL CHARACTER [pedestrian orientation (setbacks and stepbacks, building orientation, building façade, storage and equipment), building form, height, historic context, vehicle access (vehicle access, loading and service areas, parking and access), building design typologies precedents (waterfront restaurant/commercial structure, working/commercial wharf, maritime structure, parking structure)]; SIGNAGE [vehicle signage, pedestrian signage, identity signage]; LIGHTING [vehicle lighting, pedestrian lighting, specialty lighting]; SUSTAINABILITY [stormwater, shoreline, site construction, LEED Certification] issues.


Port Melbourne Waterfront Urban Design Framework is a guideline prepared in order to determine the development principles of Port Melbourne Waterfront by City of Port Phillip in 2013 [17] (Figure 7). During the preparation process of the guide, an active and participatory planning approach has been adopted, themes (character and identity, aesthetics and amenity, activity, connectivity and accessibility, natural environment and safety) set by according to the common values and goals of society have been developed. In this context, the following general development principles are set forth to guide the waterfront design strategies:

- Development of various activities along the waterfront to serve the residents and visitors in Port Melbourne,
- Creation of high-quality public spaces in which people can spend more time and interact and shop,
- Development of the natural environment and revitalization of waterfront and making them visitable special places,
- Establishment of public access and designing new public places which reflects the history of the waterfront,
- Development of different experiences and activities throughout the year in the waterfront of public and private initiatives,
- Improve the quality of waterfront for residents, visitors, commercial and port activities,
- As well as popular public open spaces, supporting the activities such as ferry, shipping, cruise ships etc.,
- Adoption of sustainable design approach for the design of buildings and public spaces.

3.5. Harbourside Waterfront Development Permit Area Guidelines- CANADA (2013)

The following objectives regarding the future of the coastal area were determined in Harbourside Waterfront Development Permit Area Guidelines which was prepared in order to determine the development principles of Harbourside Waterfront by City of North Vancouver in 2013 [18] (Figure 8):

1. Design of a high quality public area with high quality form and character for North Vancouver city,
2. The revitalization of the commercial area,
3. Energy conservation,
4. Protection of water,
5. Reduction of greenhouse gas emissions.
Guidelines. While Environmental Guidelines address the subjects "energy & greenhouse gas emissions (buildings, transportation) and water", Form & Character Guidelines focus on the spatial elements such as "use of natural site characteristics, building siting, orientation and views, building form, height & massing, building materials, weather protection & shadowing, safety, security & accessibility, circulation, access & parking, streets, active transportation & transit, landscape, site furnishings & public art, open spaces, signage & wayfinding, lighting".


Tacoma Waterfront Design Guidelines was prepared in order to direct the development of Tacoma Waterfront by The City of Tacoma in 2013 [19] (Figure 9). In this respect; improving the environmental quality in the development of coastal areas, the facilitation of public access, design of walkable and human-centered public and private places, protection of the attractiveness and aesthetics of the sea, and generally improving the quality of life both those living in the region and for visitors.

Figure 9. Tacoma Waterfront (Tacoma Waterfront Design Guidelines, 2013)

The targets regarding the coastal areas in Tacoma Waterfront Design Guidelines are as follows:

- Providing public access,
- Strengthening the visual access,
- Improving the visual quality of the water, coast and the neighboring developments,
- Creating and ensuring a sustainable unique identity throughout the waterfront,
- Using the advantages of water,
- Compliance of public access with positioning, design and management strategies,
- In the realization of development objectives for waterfront, cooperation of public and private enterprises, civil society organizations and the public.

Design principles which are improved for the sustainable development of Tacoma Waterfront enclose the following topics and sub-topics:

- Public realm (waterfront walkway, wooded trails, trailheads, community gathering places, public access corridors, streetscapes, view areas/viewpoints, public access in industrial areas, trail safety and security).
- Building sites (general considerations, view considerations, shading considerations, site layout, pedestrian orientation, transition areas).
- Site details (green shorelines, shoreline edge treatments that provide closeness to the water, wildlife habitat, low impact development, landscape plantings, art, children’s play areas, site furnishings, benches, lighting, bollards, drinking fountains, picnic tables, bike racks, waste receptacles, surfacing materials, fences / screens), marina gates, guardrails, signs, logos, building sites, directional, educational / interpretive, parking and staging areas).

4. General Evaluations and Recommendations for Turkey

The review of coastal areas planning and management in Turkey reveals the accretion of a significant level of experience, particularly over the last 40 years [20]. Several important tools and instruments such as land use planning, sectoral development planning, environmental impact assessment, specially protected areas, The Shore Law have been utilised for a considerable period and significant efforts have been made by both international and national organisations by means of “independent projects” improving coastal areas planning practices. Probably the most important example of planning studies is the one for tourism development, which took place in the ’70s and early ’80s. Tourism development was seen as the primary sector for the economic development of the coastal areas. Important examples of the sub-regional tourism development plans were the Side Tourism Development Project, the Southern Antalya Tourism Development Project, the Köyceğiz Tourism Development Project and the Belek Tourism Development Project. In our country, the Southern Antalya Tourism Development Project which is the first and only project as “integrated tourism project” managing plan, programme, finance and management issues together set an important example [21, 22]. Objectives and policies of the project addressing economic and social development of the region and also protection of natural environment, agricultural and forest lands are extremely important in terms of sustainable planning of coastal areas. The project, together with other six best practices, was awarded “Integrated Tourism Development Project” by the World Tourism Organisation at International Congress that took place in Rio de Janeiro in 1991.

Rapid developments and changes in the coastal areas in Turkey have brought novel planning and management quests in 2000’s.[23]. The concept of integrated coastal management which came to the agenda within Mediterranean Action Plan contains solutions regarding the sustainable planning of...
coastal areas. The integrated coastal management which is defined as association in the management process for the sustainability of resources, consist of the identification of the issues and rules, planning and implementation of planning stages. For an effective realization of these stages, close collaboration at all levels of management and to achieve reconciliation is extremely important. “Coastal Management and Planning Projects” prepared in this context in our country, aims to improve the spatial development strategies within the framework of ensuring the intersectoral harmony for the use of natural and cultural resources and protection of sensitive ecosystems as the upper scale planning efforts and the principle of public interest and equality for accessibility and utilization of coasts. Integrated Coastal Management and Planning projects began first time in Turkey in the mid-2000s. Until today, with Samsun, Antalya, Artvin-Rize, İzmir and Sinop provinces, such projects were designed for the coastal areas of İskenderun and İzmit gulves. The projects which aim the management plans of coastal areas in Turkey in the recent years have maintained important developments whereas it has been reported that “management plans” formed in these projects could not be implemented by the responsible agencies for various reasons. Implementation is probably the weakest aspect of coastal management in Turkey [20]. This judgement applies to the implementation of both rules and regulations and of management policies and plans. In this respect, it is very important to realize applicable coastal management plans which is collaborated by all institutions and benefiting from the current legal and administrative arrangements at the highest possible level is very important.

On the other hand, within the implementation tools in coastal management and planning of Turkey, the "Waterfront Design Guidelines" are not included which are implemented successfully by various countries examining in the literature section. These guidelines in which detailed design principles regarding land use, built form, architectural character, access and mobility, open space, public realm, signage, lighting, sustainability issues were developed for the implementation of top-scale spatial strategy plans, in more detail, include the subjects such as creation and sustainability of unique identity throughout the waterfront, the facilitation of public access, design of walkable and human-centered public and private places, protection of the attractiveness and aesthetics of the sea, the adoption of sustainable design approach for the design of buildings and public spaces and generally improving the quality of life both those living in the region and for visitors.

The adoption of waterfront design guidelines which are successfully implemented by many countries for the waterfront development in Turkey and the development of our country-specific design guidelines in Turkey have great importance regarding the sustainable planning of coastal areas and the efficacy of planning system. In the process of preparation and implementation of these guidelines; adoption of an active and participatory planning approach based on the cooperation and common consensus of public and private interest groups located in the area, non-governmental organizations and public is very important.

References


