

The Urban Book Series

Edmond Manahasa
Fabio Naselli
Anna Yunitsyna *Editors*

COVID-19 (Forced) Innovations

Pandemic Impacts on Architecture and
Urbanism

 Springer

The Urban Book Series

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Chapter 6

European Coastal Areas and Opportunities for Sustainable Transformations in Post-Covid Society



Antonio Acierno

Abstract Currently, the development of coastal urban planning and landscape design must confront the existing contrasts between the urban areas along the shore (including ports, industrial areas, residential areas) and the natural spaces of cities. European coastal landscapes, relating to the sea but also to rivers and lakes, are very often characterised by various functions and suffer from strong friction between the uses that citizens would like to develop along the coasts and logistical and commercial needs. At the same time, tourism is increasingly affirming itself as a fundamental economic pillar that inevitably influences the dynamics of development and evolutionary patterns of urban shores. However, the Covid-19 pandemic has altered social, economic, cultural and productive relationships and connections. In post-Covid society, the need for open spaces is higher than before, especially along the coast in order to access the sea as a natural place of great importance. Added to this is the greater demand for proximity open spaces by the post-Covid society, so that residential areas are directly connected with healthy places on the coasts, well known for the benefits to human health. The value of water recreational activities is in fact measured through the various positive effects on citizens' well-being, in relation to physical exercise and mental well-being, which is one of the main reasons for pursuing the widest possible access to the sea. This paper aims to explore the value of ecological planning for national and international coasts, trying to analyse whether contemporary cities are effectively managed and designed to meet the economic and socio-recreational expectations of the users. The awareness of the effects of health-related environmental and socio-economic challenges, exacerbated by the current climate, economic and pandemic crisis, is a fundamental key to rethink urban planning approaches to improve the quality of life in our coastal cities.

Keywords Coastal cities · Open spaces · Healthy planning · Green blue infrastructure · Nature-based solutions · Ecosystem services

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6.1 Introduction: Coastal Areas as Space of Opportunities

The European coastal areas are characterised by various morphologies with the presence of hills, cliffs, rocks, beaches and ports, the latter very often situated in the middle of a high densely urbanised areas.

The urban and landscape planning have to necessarily consider the relations and possible conflicts between urbanised areas, such as ports, industrial and residential areas and natural ones. Coastal landscapes, including the river coasts, across Europe are often characterised by competing land uses where settlements and infrastructure, especially road and train networks, are located. Conversely, the tourism industry is also a major driving force with its own development dynamics and typical spatial patterns.

In the post-covid society the demand for open spaces is growing, especially on the coastline for the access to the sea as a very strong natural place. Moreover, the need of open space of proximity near the residential areas and of the well-known benefits of the coastal areas for health are increasing in the post-covid society. Water-based recreation has various positive effects on human health and well-being—in relation to physical exercise and mental well-being, which is one of the main reasons to pursue the widest possible access to the seaside (Bolund and Hunhammar 1999). The coastal area is also an important and often vulnerable habitat zone for flora and fauna which brings additional demands on such areas and also places them at risk from damage and degradation. Moreover, the natural risks, such as coastal erosion or landslides together with flooding, due to the current climate change, reclaim a special attention in designing green/blue infrastructure to solve the landscape fragmentation (Weissenberger and Chouinard 2015).

These fields of investigation are a central focus in my research developed in recent years at international and national level. Particularly I was engaged in three different projects.

Firstly, at international level, in the Erasmus + project “WAVE. *Water Areas Vision for Europe*” (2020–22), developed together with other European universities, the research tried to understand if the coasts of some European cities are actually designed and managed to meet the economic and socio-recreational expectations of citizens. For this reason, the research investigated specific areas of the sea/river cities, based on similar characteristics that allow for comparison (Constanta on the Black Sea in Romania, Tallinn on the Baltic Sea in Estonia, Naples on the Mediterranean Sea in Italy and Freising in Germany). To answer this question, the team analysed the coastal urban dynamics and the planning of these spaces, examining the efforts of public policies to ensure accessibility to coastal functions for all users and permeability between the coast and the rest of the city.

Since the waterfront influences the conformation of public spaces along the coast in relation to their use and perception, the research aims at integrating this theme in the ecological/landscape design through approaches such as green–blue infrastructure. The goal is to reconnect the heterogeneous fragments of contemporary sea/river coasts from an environmental and functional point of view, in order to support

the drafting of efficient planning for these areas, proposing hybrid and sustainable recreational spaces where punctual interventions can ensure greater social benefits (Bell et al. 2022; Badami and Ronsivalle 2008). Secondly, another developed international research was the Galileo project “*Re-SEA-ourcing CITY. City-sea interface as a resource for people: urban regeneration in the context of ecological transition*”. The project is based on the partnership between the Department of Architecture of the Federico II University of Naples and the CNR IRISS, for the Italian part, with the CNRS (Centre National De La Recherche Scientifique) and the University of Aix-Marseille, for the French part. The aim is to analyse the city–sea interface looking at the opportunities for the regeneration of urban coasts. The focus is the reading of the coasts of large cities in a socio-recreational and landscape-environmental key for sustainable management and efficient planning (Acierno et al. 2021). The proposed research aims to compare the urban coasts of Naples and Marseille, exploring opportunities for enlarge the use of urban beaches and green open areas, places able to offer benefits and amenities for citizens, especially in post-covid era (Pilkey et al. 2011). The regeneration of the fragmented strips of green areas along the sea represents the idea of creating an extension of residential/commercial neighbourhoods for healthy open space useful for some particular diseases but also for creating opportunities to feel safer in emergency periods during covid crisis.

Thirdly, at national level, another proposal (not yet started) from an Italian team composed of five universities (University Alma Mater of Bologna, University of Siena, Polytechnic of Milan, Polytechnic of Turin and University Federico II of Naples) is aiming at investigating the relationship between the presence of green blue infrastructure and health of citizens. Only Naples, among the 5 cities analysed, is sited on the coast and characterised by a specific climate for the presence of the sea able to carry many benefits to people.

The awareness of the combined effects of the above-mentioned health-related environmental and socio-economic challenges, exacerbated by the climate, economic and COVID-19-related current crisis, it is fundamental to rethink urban planning approaches to enhance quality of life, health and well-being in our coastal cities.

Many studies provided evidence around the proximity to urban green areas and the reduced incidence risk of many chronic diseases, i.e. obesity, diabetes, mental health (Astell-Burt et al. 2014). Furthermore, a large number of studies investigated the linkages between park attractiveness and physical activity (Gascon et al. 2017).

Such a body of studies evidences the need for carefully planning, distributing and designing a network of multi-functional and multi-scale Green and Blue Infrastructures (GBI), that are defined as ‘*a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air quality, space for recreation and climate mitigation and adaptation. This network of green (land) and blue (water) spaces can improve environmental conditions and therefore citizens’ health and quality of life*’ (European Commission 2013).

In fact, the quantity and quality of urban GBI and their related accessibility are not always fairly distributed across urban areas, especially on the coasts (Kim et al. 2019). The evidence of the scarcity of green open areas near the sea is under clear

observation: on the coast port, traffic, commercial activities are more frequent than the leisure or relax ones. While studies concerning the perceived well-being and quality of life in relation to urban GBI are growing, the studies about the health chronic illness (e.g. type-2 diabetes, neurodegenerative illness and asthma), socio-economic indicators and urban GBI indicators in European cities are still poorly explored.

There is a strong need to understand how and where urban GBI and their services should be managed to deliver on multiple benefits to citizens. This subject remains poorly investigated and difficult for policymakers to incorporate into local policies and plans (Geneletti et al. 2020).

The main aim of the proposed research is to better assess the distribution of GBI to support urban planners and decision makers in taking decisions over land use priorities and regeneration opportunities, supporting social, environmental and health-related justice. The research aims at investigating and understanding the relations between urban morphology, GBI presence and quality, the socio-economic profile of the population and the incidence of specific diseases in populations in coastal cities, to provide recommendations for planning healthier and higher quality cities. The research will be focused on the impact of GBI planning (in terms of quantity, location and quality) on citizens' health and well-being to be verified among different coastal cities with different dimensions, latitudes, climate, socio-economic characteristics, living conditions and health-related issues and behaviours (Völker and Kisteman 2015).

The proximity of open spaces to residential/commercial areas near river or sea is a central issue in the post-covid society because it guarantees the opportunity to move around in green areas with limited risk. Moreover, the recreational activities developed in open spaces near water areas, as beaches or river coasts, are more effective than other open spaces sited in metropolitan cities (Moreno 2020).

The growing demand of coastal open spaces from urban users confirms the supposed basis of the research.

6.2 The Case Study of Naples

The case of Naples is interesting in comparison with other European cities located in central Europe. The climate is Mediterranean with mild and rainy winters and hot and sunny summers refreshed by the sea breeze. The best socio-economic conditions are found in the widespread urban system; the zones farther from the sea host less affluent sections of the population. Since many urban areas are closely related with the coastal and marine environment, the case of Naples will be exemplary in this sense. The case study of Naples offers the chance to study the relationship between the sea and the arise or decrease of incidence of particular pathologies. The proximity to the maritime element will in fact be the basis for a comparative gradient between coastal and inner zones, from the point of view of environmental benefits and spatial distribution of different social groups (Acierno et al. 2021; Vitale 2006).



Fig. 6.1 Main areas of Naples coast (Map data ©2021 Google)

The analysis in progress started from a selection of study areas on the coast of Naples: Bagnoli-Coroglio; Posillipo, Riviera di Chiaia, Molo S. Vincenzo, Port area, San Giovanni A Teduccio (Fig. 6.1).

The six areas were classified through the main features related to the natural characteristic or the use. Particularly Bagnoli and San Giovanni a Teduccio were classified as disused industrial land in regeneration, Posillipo is a green and residential area, Riviera di Chiaia is similar to an urban beach area, Molo San Vincenzo is an unused area to be classified as area in transition, finally the port area with the presence of different activities (passengers' traffic, commercial traffic, shipyard, containers docks).

The most relevant areas for the research are the urban beaches and all the natural open spaces, equipped or not, suitable for recreational uses where people are in touch with nature. In such a manner, citizens are able to develop open air activities and benefit from the contact to the sea.

The most natural area on the Neapolitan coast is Posillipo composed of cliffs and green areas where there are a few beaches, usually privatised and consequently very difficult to access. The Riviera di Chiaia (Fig. 6.2) is an urban waterfront, in many parts only for pedestrians, where citizens and tourists can walk and spend their time, especially during the night for the large offer of restaurants. The urban beaches, despite the existing rules about their management and improvement, are very few and mainly concentrated in the middle of the Neapolitan coastline, even if not all of them are freely accessible by the users.

The coast, as in many ancient European cities, has a long history with a deep stratification of uses and land modifications, with a rich landscape but degraded in many parts. From S. Giovanni a Teduccio on the east to Bagnoli on the west, the Neapolitan coast is articulated in different landscapes and occupied by many



Fig. 6.2 Urban beach in Chiaia (Cosentino 2019)

activities considering the presence of the port and commercial/passenger traffic. It is evident a difficulty for population to access the sea and the beaches such as other open spaces useful for walking and relaxing. Moreover, access to the sea for recreational and leisure uses is particularly limited because of the presence of the port activities, the specific orography and often the privatisation of beaches.

The history of Naples' coast in last two centuries declares a progressive transformation with a growing degradation of public spaces. Some parts were less compromised and maintained the original naturalistic and landscape features, like in Posillipo and Chiaia, but other parts, as the former industrial areas, as Bagnoli and San Giovanni a Teduccio, experimented a deep modification in terms of access to the natural resources (Giovinazzi and Moretti 2010; Clemente 2011).

The areas of Bagnoli and San Giovanni have been for many decades the sites of industrial settlements which are now in abandonment and only partially reconverted. In both areas, the local population, composed by working class, claim green areas for young and elderly people such as the bathing use of beaches. In Bagnoli, during the last thirty years many plans and projects were produced but no one was carried on and it is a waiting area for transformation yet. In the east, the situation is more difficult because the port authority would expand its quays to meet the growing demand for container transport on huge ships, clashing with the aspirations of the users (Palmentieri 2016; Coppola 2020).

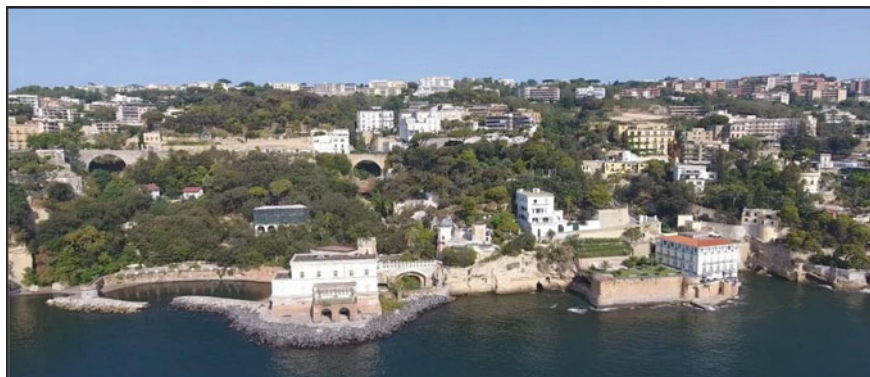


Fig. 6.3 Posillipo's coast (Image data ©2021 Google)

Along the coast from the east to the west, except for the two previous disused industrial areas, there are the other four interesting areas with high landscapes and historic values.

The Posillipo area up to Mergellina has an amazing landscape which is difficult to access considering the orographic features and the high fragmented system of private properties (Fig. 6.3). The coast is high and often rocky except for a few small coves which unfortunately allows access only to residents.

Mobility is difficult for the composition of the roads network consisting of narrow streets and limited parking areas. It represents a natural space mainly used by citizens sited in the district which is composed mostly from the wealthiest classes of the population. Moreover, many areas present high risks of landslides and the free access to them is not allowed despite the constant illegal use.

The area of Chiaia represents a real urban promenade and is characterised by low artificial rocks and small stretches of beach in which citizens are used to go for bathing. The waters are partially suitable for bathing, and the beaches are poorly or not at all equipped even if many Neapolitans have no doubt about considering the opportunity to swim in the sea there. After Chiaia, on the east side we find the area of Santa Lucia which is rich of restaurants, pubs and some cultural landmarks (Castel dell'Ovo, Borgo Marinari) attracting many tourists in the zone. From Santa Lucia, is it possible to reach by foot in a few minutes the San Vincenzo pier, the historic dock going into the sea for two kilometres and offering an amazing view of the city from the water. The pier at the moment is abandoned and inaccessible, except in occasion of events. In the last two decades, many re-development projects have been produced to give free access to the public space equipped with many recreational facilities for residents and tourists. The coastal area from Molo Beverello to Vigliena is occupied by the traffic/commercial activities and shipyard located in the port of the city.

All the areas analysed in the three above-mentioned research projects were studied in relationship with the recreational use opportunity and healthy benefits to citizens in terms of natural characteristics, anthropic uses and planning regulations. In the

Moreover, the main aim of the research is to extract useful indicators for the description of the coastal areas and their potentialities for recreational and healthy uses. For gaining it the results of the analytical phase, based on the collection of physical/socio-economic data, integrated with the findings of the questionnaires, will be discussed highlighting the core features of coastal areas in terms of recreational/healthy benefits.

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