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# LEARNING FROM WATERFRONT REGENERATION PROJECTS AND CONTEMPORARY DESIGN APPROACHES OF EUROPEAN PORT CITIES

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This paper analyses the processes and approaches of waterfront regenerations in Europe and aims to evaluate the implementations. There are some common processes and cross-cultural transactions between port cities, as all port cities have to respond to the same functions to be part of the network. Since ports were interrelated, architectural approaches and implementations in port cities were transferred to other locations. Port areas changed through the expansion of the city, economical changes, technological developments, wars, fires, de-industrialization and containerization. Facts like containerization and de-industrialization caused the relocation of the port. Through regeneration projects, industrial heritage is preserved and derelict areas are used for the implementation of contemporary architecture. Examining some case cities (Docklands, Genoa, Hafencity) helps learning from previous projects realised in last decades. Hamburg Hafencity project demonstrates a successful intervention, but a relatively failed example might be Izmir waterfront regeneration project. The port area of Izmir became a derelict area after de-industrialization. As industrial buildings could not adapt to the changes, they have been abandoned. The failure of the project provides an opportunity to study the role of actors (including architects, planners, organizations, stakeholders) and draw some lessons through previous generations of waterfront regenerations for Izmir.

## Keywords

port cities, European waterfront regenerations, Izmir, contemporary architecture

## How to Cite

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## INTRODUCTION

This paper discusses the history and evolution of the waterfront regeneration projects undertaken in Europe via paired comparisons in order to highlight the current changes in architectural design and development approaches. Waterfronts in port cities have unique qualities, such as being located on water's edge and have valuable, but abandoned industrial heritage in historical environments. This situation is a chance for architects to develop ideas and implement their design practices. This leads to an opportunity to observe changes in the interface between cities and ports. These areas can also be considered to be laboratories for the process of urban renewal on a wider scale and lessons can be drawn as instructive for contemporary architecture and planning. Here, the main aim in examining different implementations of port city regenerations is to draw lessons for a Turkish city, which experienced an unsuccessful transformation procedure. This paper is developed from the completed master thesis of one of the authors<sup>1</sup>.

## THE NEED OF WATERFRONT REGENERATION PROJECTS

The urban waterfronts of port cities have always been hubs of transportation, trade and commerce<sup>2</sup>. However, the port and city relationship also shifts due to the needs of the port and the temporal needs of some key players in time<sup>3</sup>. Global, political, economic and technological developments have reshaped ports and their waterfronts since the first interrelations between cities started. In terms of waterfront regeneration, we can see it is forced by port closure, deindustrialisation, land abandonment, a desire for open space and containerisation<sup>4</sup>. After becoming derelict, since the 1960s most of these spaces have been converted to other uses in an attempt to reconnect local people with water and associated waterside areas. Urban waterfronts have been under debate since then and it is argued they have become great opportunities to create public open spaces. Technological changes in shipping and cargo handling facilities triggered the transformation of ports. Containerization and other technological innovations were accepted on a global scale after the mid-1960s, and ports moved away from the city core<sup>5</sup>. Once this move had happened, the port-city relationship began to split and they started to become two distinct entities. This separation was accelerated with the advent of more recent advanced port logistics and especially with containerization: the effect of which cannot be underestimated on the relationship between the working classes and the port as employment levels within the port decreased significantly. Such effects can also be seen in the physical landscape with changes in building stock and new uses for the land. Schubert<sup>6</sup> recognised a more general trend when he labelled these changes as “from ships to chips”, reflecting the increased value of information processing for economies globally and the corresponding decreased value of the physical transportation of cargo.

Because of their geopolitical locations and the interest, port city waterfront projects have garnered from various agents and actors, regenerated port areas have somehow become a reflection of the contemporary architecture of each decade since the 1960s. Four case studies are chosen to exemplify successive waves of port city renewal –London Docklands, Genoa Expo, Hamburg Hafencity and Izmir by authors. These case studies are selected from different decades in order to reflect the effect of accumulated experience in European waterfront projects culminating in suggestions for the Izmir project.

## LONDON DOCKLANDS DEVELOPMENT PROJECT

By the mid-1930s, London's upriver docks were at their peak and The Royal Docks achieved a peak of economic growth in the 1950s. But between 1961 and 1971, Greater London lost a significant quantity of jobs in manufacturing, trade, communications and public utilities. After the advent of containerisation and other technological changes, the decline truly began and, at the end of the 1960s, the Port of London Authority (PLA) decided that the docks were no longer affordable. The ports of London have shifted several times towards the

North Sea across their history. This reflects the fact that container ports are usually located further from ports, which emerge with or close to the city core. Today, Tilbury Port is in use but Gateway Port has been under construction on the North Bank of River Thames since 2011.

The West India and Millwall Docks were closed in 1980 and the Royal Docks were closed for general cargo handling at the end of 1981. Cargo handling operations were transferred to Tilbury after the closure. When the Docklands area became deindustrialized, working and living conditions were not suitable in these areas anymore. Additionally, in the 1960s, the manufacturing industry dramatically declined in the United Kingdom. This has been traditionally associated with poor housing. These are the reasons why socio-economic and environmental problems were incurred after deindustrialisation.

Similar to other regeneration projects, Docklands Development Project was a long-term project, which can be understood through the three phases of the process. The first phase of the development was based on the initial decisions. First of all, a decision was needed over whether or not to fill the land. The main purpose of the project was the economic regeneration of the East End. Accordingly the actors of development project clarified the focal point as the Isle of Dogs. The marketing process started to sell the land to investors, and to the private housing market. The infrastructure development programme played an important role in order to connect the East End and central London. Therefore, transport was a significant issue and Docklands Light Railway (DLR) became part of the agenda and a decision was made to build it.

According to Meyer<sup>7</sup>, the development of the Isle of Dogs is based on three elements:

- An improved connection to the city centre, a highlight of which is the construction of a new eastern extension of the Jubilee Underground line.
- The development of Canary Wharf into a full-fledged city centre surrounding the basins of the West India Docks.
- A strong spatial awareness of and anchorage to the Isle of Dogs was to be achieved by a good structuralization of east London's large open spaces: parks, watercourses, and basins.

The urban design of the area was based on the architectural and landscape design, and conservation of the architectural and industrial heritage. Wharves and warehouses along the Thames became abandoned after port activities moved further downstream. Therefore conservation works became important to maintain the industrial and maritime heritage.

Conservation decisions decreed that<sup>8</sup>:

- the remaining water areas that distinguished the area from other parts of East London were to be retained.
- the remaining docks were to be repaired.
- large areas of filled dock were to be re-excavated in Wapping, Surrey and Greenland Docks.

In 1981, LDDC faced the problems of dereliction in Docklands. The image of Docklands for living and jobs in the area changed rapidly after the regeneration. Economic decline was notable until the project started. Most of the area enclosed with water became abandoned and under-used. This situation was related to the economic collapse of Docklands. The local inhabitants of Docklands were no longer appropriately skilled for the economic growth of London. Therefore the idea of selling the land was important to lead to social regeneration rather than simple marketing, thus the project resulted in gentrification.

## GENOA EXPO'92

In the mid-nineteenth century, Genoa played an important role in industrial activities connected to the sea and maritime transport facilities and related industries such as shipyards, steel production and oil refineries<sup>9</sup>. This resulted in the rise of Italian industrial development in the late nineteenth and early twentieth centuries. Genoa, thus, became not only one of most industrialised cities in the world at the time, but also the most economically advanced area, with the so-called 'industrial triangle'.

The decline of the old port started in the 1950s and in 1965 the building of a substantial physical barrier, a super elevated road, finally excluded it from the old town<sup>10</sup>. Since the modern facilities came into use in the 1990s, the circulation of goods and people both increased. However, the city and port could not reintegrate after the earlier creation of the physical separation. The reasons for decline can be summed up as follows<sup>11</sup>:

- Maritime activities alone did not provide enough wealth for the inhabitants of Genoa.
- After de-industrialisation, the factories close to port did not produce anymore and the fuel industry ceased to exist.
- Residential neighbourhoods were badly affected by the overall port system (due both to the traffic movement and to the permanent structure of terminals, roads and railways). The waterfront of Genoa maintained the local identity.

Genoa established first rehabilitation of the crescent-shaped port via EXPO'92, an event to celebrate the fifth centennial of the arrival of Christopher Columbus in America. Reconnection of people and water in the frame of cultural development was the main objective of the project in Porto Antico. The focal point of the project was the re-connection of the port and the historical city centre. Renzo Piano was responsible for the whole project.

Seassaro<sup>12</sup> indicates the objectives of EXPO '92 as:

- to regenerate the previous port functions and remodel the passenger terminal (100,000 m<sup>3</sup>) to create a port grill (6000 m<sup>3</sup>) and a cruising centre with shopping and sport facilities (180,000 m<sup>3</sup>);
- to develop the service sector related to water with the creation of a multicentre to accommodate hotels, a shopping centre, housing, marina and parking (360,000 m<sup>3</sup>), a culture and exhibition center including marine research institute, university library, museum, public parking, etc. (400,000 m<sup>3</sup>);
- to expand the city's service functions with the special project entitled 'Colombo 1992' (416,000 m<sup>3</sup>)<sup>13</sup>.

The abandoned waterfront was regenerated through cultural development. Genoa EXPO '92 as an example of 1990s' waterfront regeneration project provides a guide for event-based developments. As a result of the Genoa port regeneration project, the waterfront changed and gained cultural, recreational and commercial activities via museums, restaurants and other entertainment facilities. In terms of architecture, the most important criticism was about the demolition of some buildings. The project area in Genoa was not as big as other port developments in Europe and it was dominated by only one architect in contrast to the HafenCity Project, which chose to open the design up to architectural competition.

## HAFENCITY HAMBURG

The face of Hamburg has changed many times throughout the history. The Great Fire of Hamburg in 1842 and the massive destruction occasioned during WWII caused unplanned transformations. Today, the last planning approaches undertaken on the former port area have occurred through functional transformation. Moving back to recent past, Hafencity area became a place of abandoned sheds and warehouses. Hafencity's master plan has been revised several times in order to reach the ideal plan for HafenCity. The first master plan was established in 2000 and revised in 2010<sup>1415</sup>.



FIGURE 1 Building Arabica located in Überseequartier and designed by Trojan + Trojan & Dietz Joppien on the left, former warehouse in use of Maritime Museum presently on the right.

According to the updated master plan, the eastern part of the city was re-designed in order to transform the area for a variety of uses. Three districts with a variety of uses are in the pipeline: the Baakenhafen neighbourhood will be used for different types of housing and recreation. Oberhafen will become a creative and cultural district, where existing older warehouses will be reused and sport facilities right by the water will be provided. The most eastern district, the Elbbrücken neighbourhood, will be the entrance gate with higher buildings and a mix of offices, residential and shopping facilities.

The main objectives of the project are:

- 1 to respect architectural quality.
- 2 The urban landscape and sustainability.

The master plan was evolved with public discussions through a series of exhibitions and other events. In fact, the pattern of the area has been almost totally changed. Previously, the sheds were completely rectangular and located along the fingers of the Elbe. According to the master plan, the majority of the buildings tend to be vertical in contrast to Speicherstadt's horizontal character. The master plan is based on mixed-use. As a result, innovative façade designs can be observed in the HafenCity project. Numerous sub-projects within Hafencity have ecological certificates due to their concepts of flexibility, redundancy, diversity, compactness, mixed-use and perspectives of adaption and resilience.<sup>16</sup> The Übersee Quarter neighbourhood plays an important role in the Hafencity project. Significantly, the district is blended with port heritage (Figure 1).

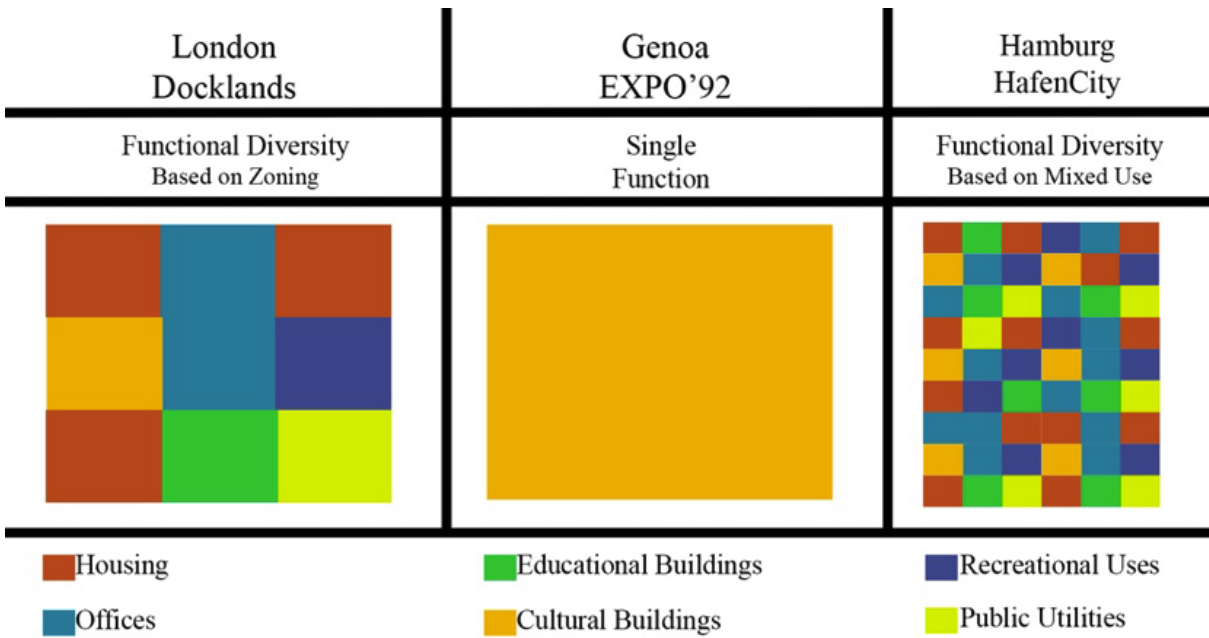


FIGURE 2 Functional Diversity in the Waterfront Regeneration Projects

Historically, the area of Hafencity was a former port area. The port cities were originally conceived from the sea or rivers. Hamburg had been perceived from River Elbe before the former port area became derelict. This is why the warehouse district Speicherstadt had an important role for the face of the city. However, Lake Alster gained more importance during the modern era. Therefore planning and building activities increased around Alster, while former Hafencity area was becoming derelict. But today, Hafencity project thus is a tool to reintroduce the value of the former port area. On the other hand, the neglected port area became accessible and available for public use after the transformation. So the project can be seen as a tool to reconnect the public and water as well. Hence social and cultural capacity generation is concerned.

## EVALUATION OF THREE EUROPEAN CASES

There is a clear progression from London Docklands to Hafencity today. Each the biggest regeneration projects of their time in Europe, there have been significant differences in planning and architectural approaches, especially with regard to social cohesion, between London and Hamburg waterfront revitalizations. The latter is a project of accumulated knowledge and experience of previous waterfront projects, which focuses on building quality, sustainability, new approaches regarding the use of resources and learning through the evaluation of previous works.

The Docklands Development Project was linked to regional strategy, but then its influence spread all over the world with the idea of the 'Mega Project' exemplified in Canary Wharf. Across the projects under examination, the methods for waterfront regeneration can be seen to differ. As the London Docklands Development Project's focal point was local economic regeneration, it was expected that social development would be obtained as a result of the regeneration project. Hafencity Project is a more recent example of such a project, which is equally concerned with economic and social development.

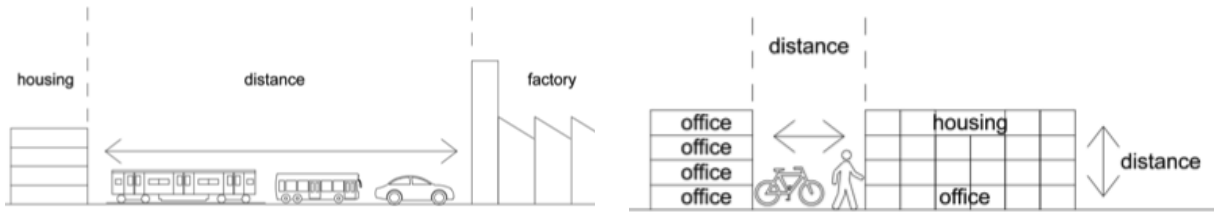


FIGURE 3 Housing-distance-office relation in modern times based on zoning on the left, housing-distance-office relation in Post-modern times based on mixed-use on the right

Today, the contemporary architectural movement is abound with landmarks, which are irrelevant to their built environment. Even though the Hafencity project already has its landmark, partially observable initiatives, like the opt out from OMA's Ring, lead the way in escaping this architectural crisis. The Überseequartier could be highlighted as a guide for contemporary architecture, for instance.

While only Hamburg, Genoa and London have been examined, these examples lead to clear conclusions about the identity of Europe. Because Europe has a cumulative culture, we can see this reflected in architecture throughout its history. Planned and unplanned interventions, such as great fires and wars, have destroyed some aspects of local heritage, but nevertheless port cities have been able to keep the identity and pattern and, in particular, the memory of their heritage alive.

Hafencity, as a relatively late project, references the previous projects. The concept of mixed-use is important as it makes the city slower. In addition, modernist cities are based on zoning. London Docklands followed the modernist idea and is based on an office-led concept but mostly separated the functions, whereas, the Hafencity project created a slower city (Figure 3) partly based on the notion of mixed use (Figure 2). In contrast to the modernist zoning approach, functional diversity exists within mixed use neighbourhoods, exemplified by master plans created around notions of increased bicycle and pedestrian pathways supported by rail links rather than roads, in the case of transport and mobility (Figure 3). This does not mean that in Hafencity, the work places of the residents will immediately be in the close surrounding or vice versa, but the project gives us the chance to observe the tendencies of inhabitants.

Hafencity project offers different typologies for housing so that people can afford to rent or buy. Most of the waterfronts were developed with recreational facilities in mind, as well as offices, housing and other functions, in order to attract tourists and visitors. Street activities such as fairs, festivals etc. create a lively atmosphere and attract people to be a part of this kind of new regeneration project. Although Hafencity is not yet a completed project, there are already users, offices, companies, restaurants and tourists in the area. Spaces meet with users and this shows the project has already achieved the expected success.





FIGURE 4 Comparison between Modernist and post-post Modernist Era

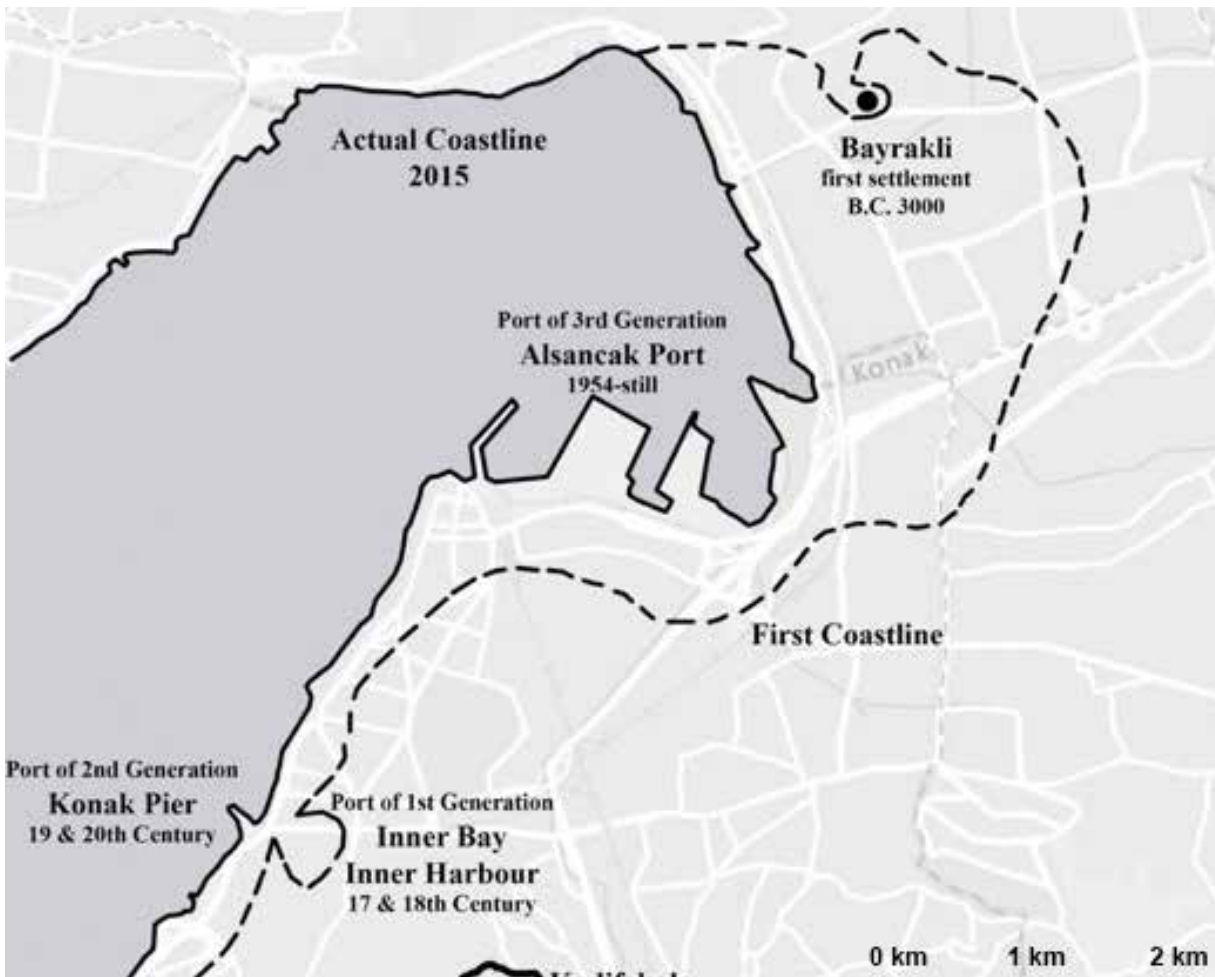


FIGURE 5 The Shift of Izmir Port

## REFLECTIONS ON İZMİR

As the case studies show, general themes can be ascribed to the decline of port city waterfronts, which can be used to make predictions for the future of other port cities. Some predictions can be made based upon this examination with concrete implications for contemporary port cities like Izmir, which are as yet to complete the process of transformation.

In this study, four case studies were chosen to exemplify successive waves of port city renewal – London Docklands, Genoa Expo, Hamburg Hafencity and finally Izmir as the main target. Additional factors in the choice of case studies includes the fact that the study deals with different scales of transformation, which can be seen in the various examples. Not only that but the case studies were also selected from different decades to reflect the effect of accumulated experience in European waterfront projects culminating in suggestions for the Izmir project. While London, Hamburg and Genoa are considered successes, which exemplify their generations, Izmir stands apart. Izmir is a port city and it has long played an important role in transshipments in the east Mediterranean. In fact, the city of Izmir has had the identity of a port city since its establishment in 3000 BC. The port of Izmir shifted several times throughout the history (Figure 5) and the coastline also changed over time. But the port-city identity of Izmir reached its peak in the nineteenth century, when the city became the main entrance port of Europe to Western Anatolia, especially in connection with the industrialization processes underway all around the world.

In common with the other case studies, the port area of Izmir became a derelict area after de-industrialization. The industrial zone, which is directly connected with the port, was particularly heavily affected by geopolitical changes and became vacant. Industrial buildings could not adapt to the economical and global changes and so they therefore became abandoned.

The Greater Izmir Metropolitan Municipality launched an international competition for the redesign of the waterfront in 2001. The successful project was influenced by London Docklands and proposed an enterprise zone for Izmir. The master plan competitions for both the Hafencity project and Izmir waterfront regeneration project were launched at the turn of the Millennium. The development process began for both cities more or less at the same time. However, the Hafencity project is on track, but the Izmir waterfront development project has not yet come into effect as expected. There are a number of differences between the port-city structures of Hamburg and Izmir, such as the generation of the port. In recent decades, most ports were separated from their city centers all over the world. But Izmir port remains in the city core. So the first phase has not yet been completed. There is motivation for moving the port, but current levels of investment are not enough to realize the project.

## CONCLUSION

Cross-culturalism is an important factor that influences the identity of the city with a harvest of different cultures. There are lots of reflections of transcultural movements in waterfronts of port cities and their hinterlands. Infrastructure developments were important to connect the ports and hinterlands in order to transport raw materials and goods. Waterfronts were therefore shaped through trade-relations and this is affected by cross-culturalism. Interestingly, cross culturalism seems to have developed in parallel to Konratieff's globalization waves. Cross-culturalism may have achieved its peak today as it is illustrated in Figure 6.


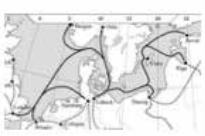









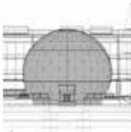

Stage of Cross Culturalism	Trade Routes	London	Genoa	Hamburg
				
				
	Google Turkey			

FIGURE 6 Cross-culturalism and its influences on waterfronts of port cities

Although port cities have dynamic character, the line and the face of the waterfront changes rapidly in any port cities around the world, the historical pattern and the local identity must be considered in any step of development project. As we accept that the waterfront regeneration projects are the ambitious projects for the contemporary architectural design approaches, we can say that today's architectural and urban design tendencies are mostly based on sustainable design with sustainable identity.<sup>17</sup> Waterfront regeneration projects are considered as ambitious initiatives for the urban development process and shall be the layout for reflecting the architectural design approaches of the era or decade. The changes on waterfronts through waterfront regeneration projects are reflected in Figure 5. The waterfront regeneration projects steer our future through past. With this in mind, it could be better to avoid implanting iconic buildings simply to attract tourists. Instead, the project itself must be contemplated with ideas and decisions that consider the built environment. Architectural heritage and the identity of the area must be preserved. Learning from previous projects and even from projects themselves will provide more sustainable and successful results. High architectural quality, regionalism, conservation & preservation of the pattern and the environment of the architectural heritage, the avoidance of irrelevant iconic buildings, an emphasis on the local identity and a re-connection with the port culture through events, which are connected to the identity are the leading notions of today's architectural approaches.<sup>18</sup>

### Disclosure Statement

No potential conflict of interest was reported by the authors.

### Notes on contributor(s)

Fatma Tanis received a bachelor degree in architecture from Mimar Sinan Fine Arts University in 2013. She earned a master of science degree from Istanbul Technical University, Architecture Department, History of Architecture Programme with the thesis entitled "The Waterfront Regeneration Projects And Contemporary Design Approaches Of European Port Cities". She is a PhD Candidate in History of Architecture and Urban Planning, TU Delft. Her research explores how shifting networks have created a unique palimpsest of structures and actor networks between 16th and 21st century in Izmir, a port city on western coast in Turkey.

Fatma Erkök is Associate Professor in ITU Faculty of Architecture. She received her PhD from ITU in 2002. She was a visiting scholar at IUAV Venice in 1997 and at TU Delft in 2007/8. She has taken part in national and international level research projects. She has been author or co-editor for a number of books, such as: "Doctoral Education in Architecture: Challenges and Opportunities" (2015), "Danube Delta Advanced Research Center Murighiol, Romania (2012) and "Residential Entrances and Doors of Istanbul" (1996). Her research areas focus on doctoral education in architecture, urban issues, water & city relations, body & space relations.

## Endnotes

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