

REINVENTING THE IMAGE OF CITIES USING THE ELEMENT OF WATER: INTERNATIONAL CASE STUDIES OF WATERFRONT URBAN DEVELOPMENTS

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ABSTRACT

The relationship between human settlements and water has been complex and multidimensional throughout history. However, the urban history of cities is intrinsically related to their interaction with the element of water. The element of water enables spectacles to occur. People gravitate towards the water's edge, socio-cultural life improves, new spaces are discovered, and, in turn, the city is reconciled with the waterfront (natural harbour/river) by invigorating the civic realm via the activation of public space(s). The conference paper focuses on exploring four different international urban master-planning projects (Casablanca in Morocco, Hong Kong Special Administrative Region in China, Liverpool in the United Kingdom and Shanghai in China), which utilise the element of water (natural harbour/river) as a means of reinvigorating major district(s) within city centres via the process of reconciliation, and in turn, reinventing the image of the city. The main aim of the research team is to understand the dynamics behind these urban master-plan projects and to highlight the new aspects of the process of re-evaluation/re-invention of the city's identity and urban character through reconnecting to the water's edge (natural harbour/river) and regenerating the waterfront. In summary, this paper is an attempt to express the significance of integrating water as a unified natural element and as an essential landscape feature within urban master-planning visions leading to a more sustainable future for our cities globally, as well as to highlight the new urban design aspects of the process of re-evaluation and re-invention of the city's identity and urban character. The main drive of the paper is that emphasising links to the element of water should be considered a key lead urban design factor within the regeneration of cities internationally.

Keywords: international cities, sustainability, waterfront developments, urban developments, urban planning, urban regeneration.

1 INTRODUCTION

Water is considered the lifeblood of human society. The existence of water has always been a fundamental determining factor in the location, emergence and growth of human settlements. It has also been one of the essential elements and articulating aspects of our surrounding landscape. Water availability, whether in the form of rivers, streams, sea, or ocean, widely explains the emergence of urban settlements by human societies. In fact, the relationship between human societies and water is far more complex than it appears. Water impacts urban life beyond purely biological or environmental considerations and contributes to grounding people in spaces, creating the social tissue and identity of the local community beyond administrative limits [1].

Moreover, water was considered a source of spiritual purification, change, and revival. Since the dawn of time, humans have revered the water in rivers, springs, and oceans. Water has the ability to change, purify, and inspire, as well as allow for transition and metamorphosis. At the same time, it has served as a symbol of imagination, spirit, creativity, and human aspiration, as well as a target for unlimited manipulations. The flowing of water is a constant memory of the changing and the ephemeral [2].



However, this intimate connection to water has gradually vanished with the rise of industrialisation and rapid urbanisation, particularly in the 20th century. As a result, the relationship between cities and their waterscapes became more complex and multidimensional. Cities have experienced population booms and urban expansion, while the water landscape hasn't been given much importance in this situation [2]. Unfortunately, in several cities, the focus on the densification of urban areas has led to the decline, abandonment and degradation of several waterfront areas. Such areas simply became the domain of heavy industries, transit, or waste disposal, rarely seen by most city residents [3]. This trend of disdain for waterfront areas has reached many cities around the world.

As waterfront cities began to develop post-industrial urban development strategies throughout the 1970s to our present time, urban waterfronts became central to urban renewal and regeneration throughout the world [3]. As a result, several cities are trying to reinvent their connection with water and create a progressive reconciliation with their waterscapes. This reconciliation results in articulated and sophisticated structures that characterise the physical appearance of cities and their image to the rest of the globe. The reason for this movement is the growing interest in switching lifestyle from quantity to quality: a creation of affluent water space, a recycling-oriented society, etc. [2]. In this context, waterfronts are considered opportunities for the city as a whole [4], particularly in rebranding its image locally and internationally. Furthermore, the waterfront's role has been enhanced by its position as an important node for the land and sea and an entrance through which the city develops relationships with other areas [5]. As a result, waterfronts have become an important part of the broader concept of the city and the region [6].

The reconnection of cities to water, and the development and implementation of new urban strategies aimed at redeveloping urban waterfronts, have resulted from different approaches: namely, the restructuring of water-front activities, the increased importance of leisure and tourism, and growing concern for environmental issues over the last few decades. Moreover, these strategies varied depending on the urban, economic, social and cultural contexts of the city.

In fact, since waterfronts have become the areas in which the urban image is reconstituted [6]. Several global cities such as Casablanca (Morocco), Hong Kong Special Administrative Region (SAR) (China), Liverpool (United Kingdom) and Shanghai (China) have waterfront redevelopment projects at the forefront of their main urban schemes using different approaches. This article explores these different urban/water reconnection approaches and rebranding processes by examining four international case studies of influential waterfront projects in these cities. Starting with different urban, economic, social and cultural contexts, we try to understand how these case studies use waterfront regeneration projects to reinvent their urban image. We aim to study the dynamics behind these projects and highlight the new aspects of the re-evaluation and re-invention of cities' identity and urban characters. We try, through this study, to highlight different examples of successful approaches that other cities around the world can adopt to recreate their connection with their surrounding waterscape and to benefit their image locally and internationally.

2 MOTIVATIONS FOR THE CREATION OF THE PAPER

The professional and academic expertise of the authors (dispersed internationally) lies within the disciplines of architecture (Hui), arts and culture (Roberts) and urban design and development (Benabbou and Shao). The authors' detailed knowledge and previous research of urban developments/redevelopments combined with the Wessex's Sustainable Cities 2022 Conference's focus on "City/Waterfront Interaction" [7] motivated the authors to further



investigate four waterfront urban developments within the international cities of Casablanca (Morocco), Hong Kong SAR (China), Liverpool (United Kingdom) and Shanghai (China).

The title of this paper makes direct reference to Kevin Lynch's book *The Image of the City* [8]. In his seminal work, Lynch proposed a set of urban design principles for the betterment of urban developments/redevelopments, hoping that future cities/urban districts will be places that are memorable, navigable and pleasurable to the city-user within the context of his/her mental map. However, Lynch also points out that "there are other influences on imageability" [8], such as the city user's emotions [9], [10] invoked by the sense of place (*genius loci*), provision of high-quality public space/civic amenities, connection to natural elements for respite and the new image of the place creating a new identity of the city (personal/collective meaning).

The origin of this paper can be first traced to Hui and Mak's [11] establishment of the association between the building typology of the International High-Speed Rail (IHSR) station(s) (St. Pancras International Station and West Kowloon Station) and the integration of master-plan led urban developments ((King's Cross Central Development) (West Kowloon Cultural District)) within the cities of London (United Kingdom) and Hong Kong SAR (China) [11]. Secondly, Roberts [12] established that the revitalisation of ex-industrial sites (798 Art Zone and 751 D-Park in Beijing, China) via the implementation of arts and cultural building programming, can lead to commercially viable schemes [12]. However, opportunities for further improvement within the realms of facilitating local enterprise development and improvement of social welfare were identified and viable strategies were proposed [12].

The findings from the Urban Maestro team [13] emphasise design quality is central to all urban developments/redevelopments. The design quality is further categorised into the sub-sectors: "culture", "capacity", "coordination", "collaboration", "commitment" and "continuity". Together with the recommendations (50 principles) laid out by the Charter of Public Space [14] for the betterment of public space(s), it is the authors' wish, besides analysing the physical characteristics of the four waterfront urban development schemes, to discuss the design quality of the schemes. The author also wishes to indicate the design features of the public space/civic realm within each specific urban waterfront development.

3 SUSTAINABILITY WITHIN THE CONTEXT OF URBAN DEVELOPMENTS

The concept of "sustainable development" has been developed and refined over time and reflects the vision of a harmonious economic, environmental and social development for all of humanity. In 1987, the United Nations published a study entitled "Our Common Future", which formally introduced the concept of sustainable development: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [15]. In 2015, all UN member states adopted the "Sustainable Development Goals" (SDGs), which set out a 15-year plan to achieve these goals, with 17 Sustainable Development Goals at the heart of the agenda [16] and a call to action for all countries, both developed and developing.

As the world responds to the concept of "sustainable development", urban researchers and architects have begun to re-examine the sustainability of cities in the 21st century. The city's waterfront is the origin of urban development, which increasingly faces challenges in terms of resources, energy, environment, urban transport, commerce, information and communication [17]. The regeneration of urban waterfronts is an important process for the sustainable and effective development of urban spaces, regional cultures and market economies.



4 ARTS AND CULTURE LEAD TO VIBRANCY

Since the 1980s, many waterfront regeneration schemes attest to the developing understanding amongst city planners that incorporating space and opportunities for arts and culture leads to vibrancy. Notably, officials in Liverpool have documented the city's regeneration journey "amassing over two decades of evidence on the impact and value of cultural interventions as catalysts for urban change" [18]. Spectacular waterside cultural events, such as the parades of giant puppets orchestrated by the Royal de Luxe company [19], generate tourism and enormous income and elevate the public mood.

Such activities perhaps satisfy the innate human urge for festivals and rituals, as identified by philosopher Mikhail Bakhtin in his theory of the "carnavalesque" [20]. The mundanity of routine existence is relieved by temporary and spectacular communal happenings which transport emotionally. Importantly, such magnetising cultural events also heighten the identity of location and aid the identification of individuals with the place: "The potential of festive-like events to influence place identity is...undertaken by cities seeking to rebrand or enhance communal identity...New shared traditions and symbols of common identity are essential if divided communities are to find commonality. And large-scale spectacular outdoor experiences ensure that all communities feel that they can participate" [21]. Access to joyous cultural events undoubtedly enhances community fulfilment, but the proximity of water, inducing feelings of well-being as mentioned above, augments the efficacy of cultural events and arts. Thereby, cyclically, public satisfaction is improved.

5 WATERFRONT URBAN DEVELOPMENT CASE STUDIES

After examining the background of this study, along with considering issues of sustainability and the inclusion of the arts and cultural activities, the next section will focus on the four selected case studies. The case studies will define the histories of the sites, the patterns of regeneration, the characteristic resulting features and the merit of the endeavours.

5.1 Waterfront urban development in Casablanca (Morocco):

Casablanca Marina Project Development (CMPD)

Casablanca is the economic capital of Morocco. The city has a long, intimate and complex connection to the Atlantic Ocean as it symbolises its urban emergence, opening to the world and the door from which colonising threats came in the past. The latter has caused the city to give its back to the ocean for centuries, leaving the coastal area for harbour activities, heavy industries, or simply degradation. It was not until the 1990s that the coastal area started to attract the attention of the city's decision-makers. It resulted in the initiation of several coastal urban projects, including the Casablanca Marina project, targeting reconnection of the city to the ocean. The project was also born from the desire to enhance the Atlantic coast area and develop an urban waterfront that reinforces the branding strategies of the city as an economic hub. However, the project faced multiple logistic issues that delayed its construction for several years. Therefore, it did not start until 2001 and was rebooted again in 2005 [22]. The project was developed over a total area of 26 hectares, including 10 hectares reclaimed from the sea. It consists mainly of a central business district, residential areas, facilities and public spaces. The programme of the building covers a total surface area of 476,600 m² of floor space, excluding car parks, with multiple functions: offices: 33%, trade: 15%, hospitality: 12%, leisure facilities, services and entertainment: 10% and residential: 30% [23]. Today the project is already finished. Most of the buildings are already hosting companies, start-ups and new residents. The project became not only a business hub but also a vibrant public space



that reconnects the city to the ocean while linking two of the main city landmarks: The Casablanca Port and the Hassan II Mosque.

5.2 Waterfront urban development in Hong Kong SAR (China): West Kowloon Cultural District (WKCD)

The West Kowloon Cultural District (WKCD) (40 hectares) is located in the Yau Tsim Mong District (one of the most densely populated and vibrant in Hong Kong SAR). Interestingly, the WKCD schematic design went through numerous property developer(s)/architect(s)-led design iterations. The debate centred on the single developer/multi-developer led approach; the final winner was Foster + Partners Group Limited/multi-developer consortium in 2011 [24]. The WKCD is currently constructed in phases, with the overall completion targeted for 2040 (estimated). The WKCD development led by the WKCD Authority (Hong Kong Government (HKGGOV) (WKCD)) comprises mixed-use building programming, with a special focus on the creation of world-class standard arts and cultural facilities (major art galleries, museums and performance venues), highly connected by public transportation and highly accessible by the general public. Sustainable building features include green building certification and BEAM PLUS (Hong Kong Green Building Council) [25]. The WKCD is well served by public transportation and public space comprises over 50% of the overall site area. The WKCD is orientated towards the Central Business District (located on Hong Kong Island), directly facing the Victoria Harbour waterfront, with a promenade running the entire length of the development. In relation to the WKCD, the HKGOV's Harbour-front Enhancement Committee (HEC) [26] was set up in 2004. The HEC is responsible for the improvement of 22 No. Action Areas within 73 km of harbourfront within Victoria Harbour. The Vision of HK GOV HEC:

“To enhance Victoria Harbour and its harbourfront area to become an attractive, vibrant, accessible and sustainable world-class asset: a harbour for the people, a harbour of life” [26].

5.3 Waterfront urban development in Liverpool (United Kingdom): Liverpool Waterfront Development (LWD).

Liverpool's waterfront is iconic due to the city's role as a major international port for several centuries. For two centuries, this port was the major departure point for those in Europe who wished to emigrate to North America and is recognised by its collection of buildings called the “Three Graces” [27] and by The Royal Albert Dock. Unfortunately, industrial decline, the city centre docks became increasingly derelict and dangerous throughout the 1960s and 1970s. The Mersey Docks and Harbour Board owners even considered demolishing the whole site [28].

However, in 1981, the Merseyside Development Corporation was set up to undertake the regeneration of the Royal Albert Dock complex. Arrowcroft Group was employed to complete the works with a budget of around £100 million [28]. This site is consequently one of the first notable examples of regenerating a derelict industrial area and was evidence that “During the 1980s there began to emerge a growing interest in the arts and culture as mechanisms for urban regeneration” [29]. The same area remains the focus of attention for developers in the 2020s. This might be because, as Marshall states, the waterfront of cities of the past were the generators of economic wealth. So regenerating these areas today connects our past with the future by “providing opportunities for cities to reconnect with their water's edge” [30].



5.4 Waterfront urban development in Shanghai (China): Shanghai West Bund Development (SWBD).

Shanghai is a provincial-level administrative region of China, one of the national central cities and the international economic, financial, trade, shipping, science and technology innovation centre of China as approved by the State Council of China. The city has 16 districts under its jurisdiction, and the west bank of Shanghai is located in the Xuhui Riverfront area in the southwestern part of Shanghai's central city. The Xuhui Riverfront is the only waterfront area in central Shanghai that can be developed on a large scale. Covering an area of 940 ha and a shoreline of 11.4 km, Shanghai West Bund is the most publicly vibrant new waterfront district in the centre of Shanghai.

In the 1930s, the west bund of the Huangpu River was a gathering place for the national industrial capital, with many industrial plants and logistics terminals along the river. Shanghai's first freight railway station, with the largest Longhua airport in the Far East, China's first wet-process cement plant, and Shanghai's first water and land transport terminal formed a productive shoreline for the industry. In the 1990s, Shanghai entered a period of urban transformation. The transition from the traditional economic system to a market economy and the renewal of production technology caused the traditional factories in the riverside area to fall on hard times [31]. In 2002, Shanghai was awarded the right to host the World Expo. In addition, the Comprehensive Development Plan of the Huangpu River was launched in 2010 [32], transforming the functions of the riverside areas on both sides of the Huangpu River, transforming the original production space into a living space and leading to the economic, social and cultural revival of the riverside areas.

The successful delivery of Expo 2010 Shanghai China, under the Expo's theme of "Better City, Better Life", helped to accelerate the development of the Shanghai West Bank project. The project is located across the river from the Shanghai World Expo Park and is an opportunity to enhance the international image of Shanghai, China and establish the city's name. Furthermore, the development of the Xuhui Riverfront during Shanghai's "Twelfth Five-Year Plan" in 2012 has become a new high point for the development of Shanghai's central region. It is one of the six functional areas of Shanghai. As one of Shanghai's six functional areas, the West Bund is "planning, culture-led and industry-led" in the overall development idea, with the additions of the "West Bund Cultural Corridor" brand project, the "West Bund Media Port" and the "Shanghai Dream Centre". The West Bund has been built around the "West Bund Cultural Corridor" brand project, the "West Bund Media Port", the "Shanghai Dream Centre" and other functional carrier projects. It is committed to building a cultural platform and a new cultural landmark for dialogue between Shanghai's international cultural metropolis and the world, as well as a complex structure supported by cultural creativity, artificial intelligence and innovation and finance [33]. The industrial heritage space in the West Bund has also been further transformed and utilised, and new connotations have been injected to sustain the heritage.

6 COMPARISON OF WATERFRONT URBAN DEVELOPMENTS

The four presented case studies are very diverse in terms of social, cultural and economic backgrounds. They also showcase different urban strategies to reinvent the cities' connection with their waterscapes. Therefore, in order to understand these dynamics and identify the similarities between the selected projects, we have decided to draw a comparison and assessment table that gathers all the significant data about each project (Tables 1 and 2).



Table 1: Comparison of the physical attributes of the waterfront urban developments in Casablanca (Morocco), Hong Kong SAR (China), Liverpool (United Kingdom) and Shanghai (China).

	Four international waterfront development projects			
	Casablanca Marina Project Development (CMPD)	West Kowloon Cultural District (WKCD)	Liverpool Waterfront Development (LWD)	Shanghai West Bund (SWBD)
Physical attributes				
Location	Casablanca (Morocco)	Hong Kong SAR (China)	Liverpool (UK)	Shanghai (China)
Primary hub focus	Business and social hub	Arts and culture hub	Historical, arts and culture hub	Financial, arts and cultural corridor
Associated waterfront	Atlantic ocean	Victoria harbour	Liverpool waterfront	Xuhui waterfront region of Shanghai
Orientation of development	Central business district and social public space	Central business district/ Hong Kong Island	International waterfront cultural and civic cluster	International waterfront cultural and financial cluster
Identity/character	Contemporary	Contemporary	Historic and contemporary	Contemporary



Table 2: Comparison of the economic, cultural and social attributes of the Waterfront Urban Developments in Casablanca (Morocco), Hong Kong SAR (China), Liverpool (United Kingdom) and Shanghai (China).

Four international waterfront development projects				
	Casablanca Marina Project Development (CMPD)	West Kowloon Cultural District (WKCD)	Liverpool Waterfront Development (LWD)	Shanghai West Bund (SWBD)
Economic benefits	<ul style="list-style-type: none"> • Creation of a business hub in the city • Attraction of international companies • Provision of office spaces for start-ups • Reviving the coastal area economically • Provision of conference halls/business meeting spaces 	<ul style="list-style-type: none"> • Creation of a major arts and culture hub to showcase local and international works and talent • Creation of 16,000 jobs for the arts, commercial and retail sectors • A new attraction and destination for arriving and departing visitors (air and rail travel) to the city 	<ul style="list-style-type: none"> • Historic civic hub in the city • Attraction of international galleries and nationally important museums • Reviving the coastal area economically • Provision of restaurants, bars, shops and historical artefacts • Local council offices 	<ul style="list-style-type: none"> • High-quality public and cultural open space • Attracting international and multinational companies • International cultural and art gallery corridor • Provision of international conference and office space
Cultural benefits	<ul style="list-style-type: none"> • Provision of cultural facilities like theatres and plazas • Hosting cultural events and festivals 	<ul style="list-style-type: none"> • Creation of new arts and cultural hub • Showing the importance of arts and culture (local and international) • Provision of spaces for festivals and performances 	<ul style="list-style-type: none"> • Provision of cultural facilities like museums and galleries • Hosting large-scale international cultural events and festivals, e.g. "Tall Ships Festival" 	<ul style="list-style-type: none"> • Provision of cultural facilities such as art galleries, art centres, theatres and art parks • Hosting cultural events and festivals such as art exhibitions, cultural festivals and music festivals



Table 2: Continued.

Four international waterfront development projects				
	Casablanca Marina Project Development (CMPD)	West Kowloon Cultural District (WKCD)	Liverpool Waterfront Development (LWD)	Shanghai West Bund (SWBD)
Social benefits	<ul style="list-style-type: none">• Provision of large open public spaces for citizens• Provision of social space to enjoy the ocean view• Provision of shopping and leisure facilities (shopping malls, restaurants, marina)• Hosting social events and activities	<ul style="list-style-type: none">• Open to the general public to use• Provision of additional public green space• Provision of affordable housing in line with policy• Provision of educational facilities	<ul style="list-style-type: none">• Provision of large open public spaces for citizens and tourists• Provision of social space to enjoy the ocean view• Provision of arts and leisure facilities (shopping, art galleries/museums, restaurants, cruise terminal)	<ul style="list-style-type: none">• Provision of large open public spaces for citizens and tourists• Provision of social space to enjoy river view• Provision of shopping, arts and leisure facilities (shopping, art galleries/museums, restaurants, cruise terminal, art park)



After thoughtfully examining the information presented in Tables 1 and 2, the comparison highlights that these waterfront urban developments are very different in size, location, type of water bodies (ocean, river) and development orientations (business, arts, culture, finance, etc.). However, there are strong similarities in terms of the benefits (economic, cultural and social) that the city acquired through these projects.

The assessment shows that the four projects exhibit high urban design quality, illustrated through diverse building programming, and flexibility in design, in addition to ensuring connectivity with public transportation and continuity with the existing urban tissue, despite having different urban characters.

The projects are also characterised by high functional quality through good accessibility, security, connection, and service provision, all of which contribute to an enjoyable experience of the area for citizens.

On the environmental level, the respect and adoption of environmental policies are also considered and incorporated into their development strategies. Moreover, these waterfront developments appear to help their cities and citizens on the economic level and social and cultural levels by providing various benefits ranging from job creation to pleasant venues for social and cultural interactions. These benefits have enabled the cities to enhance residents' quality of life while improving their image locally and globally.

7 DISCUSSION

Having investigated the four international urban developments, it is evident that cities globally are simultaneously undertaking new high-quality urban developments on a grand scale. Such urban developments promise bold visions (new arts and culture/commercial hubs) for the future of the cities. They are marketed as new frontiers in terms of the re-invention of cities, thus setting the bar higher in terms of city-to-city competition and innovation (globally). However, such urban developments take decades to conceive (plan, design and construct). For example, in the CMPD (Casablanca, Morocco), SWBD (Shanghai, China) and WKCD (Hong Kong SAR, China) developments, construction is still ongoing. All four urban developments are located at the water's edge and utilise the element of water as a natural feature and landscape backdrop. The main difference lies in the building programming/mix and the overall size (26–940 ha) of the developments.

Due to the complex nature of building programming and mega-scale sizing of such urban developments, it is key that a certain degree of flexibility is factored in to allow for change-of-use in the medium to long term of the development's life span. Therefore, the recommendation would be for certain mixed-use building(s) to be "future-proofed", allowing for flexible building programming to cater to emerging trends/usages.

Besides urban renewal, governments (internationally) have invested large sums in such urban developments to reinvigorate urbanity, stimulate the economy and deliver cultural and social benefits to its citizens. However, it remains questionable to what extent such developments benefit all levels of society and what are the unintended consequences (both negative and positive) of gentrification and increased levels of tourism. Such questions are of interest and will be investigated further in the near future.

In terms of analysis, a number of limitations should be taken into consideration. First, the study has focused only on four case studies from three continents; further research including all continents may be needed to explore and compare international waterfront projects. In addition, these projects have explored the reconnection of cities to only two types of water bodies (ocean and river). Broader research, including other water body types like sea and lakes, may widen our perspective and understanding of the urban dynamics of such projects on the local and international levels.



8 CONCLUSION

The researchers have presented four international waterfront urban development case studies. These cases reinvent the image of existing cities via the creation of new large to mega-scale (sized at 26–940 ha range) masterplan-led urban developments within the existing city urban fabric linked to the element of water. The term “reinvent” relates to the aspiration of city planner(s) and government(s) to reinvent the city’s identity for citizens and visitors alike; such new urban developments present a new image of the city, encapsulating the past, present and presenting a bolder vision for the future. More so, the urban developments (each with their focus, be it arts and culture, commercial or financial hubs) create entirely new district(s) within cities, energised by mixed-use building programming, provision of the high-quality urban environment(s), linkage to major nodes of public transportation and adhering to sustainable design principles. Common to all four urban developments is the water’s edge (harbourfront/riverside) proximity. Cities are linked to the element of water as their origin. Once again, the element of water becomes a revered and valuable asset with which all can engage and participate, thus providing impetus for new cultural, economic and social opportunities.

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