Success Factors of Waterfronts Around the World

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Abstract

Victoria Harbour waterfront development faces challenges in the relationships among private and public stakeholders and developers. Six waterfront cities determined to be successful were benchmarked against Hong Kong and then studied in depth. We gathered the guidelines, laws, projects, ownership, and physical status of the waterfronts from Baltimore, Maryland, Chicago, Illinois, New York City, New York, Singapore, Republic of Singapore, Sydney, Australia, and Vancouver, Canada. We used these examples to draft conclusions on the elements that make a successful waterfront, how to achieve unity of a waterfront, and the role of guidelines in waterfront development and presented them to Designing Hong Kong.

Acknowledgements

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Executive Summary

The Victoria Harbour waterfront area is currently not satisfying the needs of both the public and private sectors on the promenade. The purpose of our project was to provide conclusions on how other successful waterfronts have worked with the integration of private and public sectors in order for the Victoria Harbour waterfront to apply what other waterfront cities have learned. Our first objective was to identify and compare the most successful waterfront characteristics, specifically the design and makeup of waterfronts, in the selected cities. Then, we identified the laws and regulations surrounding waterfront development, specifically in regard to the construction and operation of private businesses along waterfronts. Our final objective was to identify the most successful ways to integrate public and private sector stakeholders based on how other cities had done this.

To begin our analysis, we first found which waterfronts around the world are considered the best. We researched popular waterfronts around the world through tourism and news sites. From that we compiled a list of the cities that appeared most frequently in the lists and compared them to the climate, property type, and geography of Hong Kong in order to compile the final six cities for intensive study. The selected cities were Baltimore, Chicago, New York City, Singapore, Sydney, and Vancouver. These six cities all qualify as having some of the best waterfronts in the world and are all similar to Hong Kong. By learning about these waterfronts in depth, we were able to make useful conclusions about waterfronts so Victoria Harbour may improve theirs.

We conducted archival research as our main method for all of the six cities selected. We conducted literature research on each of the six cities' waterfront's history, the ownership of waterfront property, funding of waterfront development and management, who the developers of the waterfront were, what kind of developments were allowed, the guidelines and zoning laws in place, and the actual physical status of the waterfront. To further research on geographical characteristics of the cities' waterfronts, we looked at satellite images via Google Earth and Google Maps. We also conducted several semi-structured interviews in which we gathered information on the developmental process of each city waterfront. We sent out a survey for people who had visited one or more of the selected waterfronts to complete in order to gather information on what people enjoyed about them.

We have found several elements of a waterfront that need to be present in order for it to be deemed successful. These can be broken up into three main components: the environmental focus, having a variety of developments along the waterfront, and a pleasant atmosphere. Designers should put in place plans that will contribute towards a resilient waterfront that can withstand rising sea levels, erosion, and other effects of climate change. There needs to be a variety of developments along the waterfront, because only having open or green spaces is not enough to attract and continue to attract people. The waterfront should also create a special experience and atmosphere that people are able to immerse themselves into and establish an emotional connection to. This connection is what will encourage them to come back.

In order to achieve a unified waterfront, the stakeholders and planners should have a clear idea of who the waterfront is being developed for. Once the needs of that population are clear the plans must be adjusted to include those as well as: accessibility, such as public transportation, visibility of the water, community engagement such as a variety of cultural activities, and community incentive such as promotion of and a space for local businesses. A way of making sure these needs are met is to include the community surrounding the development in the initial planning stages of the development. A multi-step review process for the communication between the community, the stakeholders, and any other development experts involved must be conducted in order to ensure thorough analysis. This review process is a cyclical process of feedback between all entities.

We found that each city has their own structure when it comes to development on waterfront land. Each has a unique history that shaped it and different locations in the city, some being more commercial and financial areas and others more residential. We also found that they each have different agreements on whether the land along the waterfront was publicly or privately owned and operated.

In many cities, there are a number of stakeholders that develop on the waterfront. In any successful waterfront, there must be cooperation between the stakeholders so different sections of the waterfront can be well-incorporated with each other. We found that developmental guidelines are the main method of ensuring the unity of the waterfront is followed by the developers. The guidelines must be easily accessible, specific, and legible to ensure that all parties developing on the waterfront will plan with the city's goal in mind. A review process will help make sure these guidelines are met by developers and that they are effective in maintaining a connection along the waterfront.

After conducting in-depth analysis on the selected six cities' waterfronts, the set of conclusions presented before were divided into three parts: what are the elements of a successful waterfront, what entails a unified waterfront, and on the role of ownership of land on the waterfront. These conclusions are intended to provide reasoning as to what makes a waterfront successful, independent of where that waterfront is at.

1. Introduction

For over 2,000 years, harbors have been used as venues for the exchange of goods and passengers between boats and the shore (National Geographic Society, 2011). They allow for communities around the world to trade with each other, so easy access to them is essential for a city to have a smoothly running economy. Economic factors first attracted merchants to the waterfront but as time went on people began gathering at them for recreational purposes, such as strolling by the water or looking out at magnificent ships coming in. The waterfronts began benefitting both the city and country's economy but also the people who lived there in other ways.

Hong Kong's harbor, the Victoria Harbor, has been a critical part of the city since the early 1840s (Summers, 2019). During that time the city's rule was handed over to the British Empire, which relied on it as a major trading center for obtaining Chinese goods such as spices, tea, ceramics, and silk. The harbor remained an important part of Hong Kong's economy as the colony grew to be a global leader in maritime trade. In attempts to keep up with its economic growth, the government began to reclaim land to create more space for development. That land was leased out to many private developers who constructed highrise buildings along the waterfront, which often blocked access to the waterfront for the public.

Designing Hong Kong (DHK) (2020), a non-profit organization promoting sustainable urban planning in Hong Kong, has spent years developing projects to achieve a well-developed and 'beautiful' harbor. A study conducted by Cyrus Wong (2020) and sponsored by DHK, identified a series of criteria to assess the range of strengths and weaknesses of each section of the waterfront. This study provides a framework for comparing and contrasting Victoria Harbour's waterfront with those in other cities, which we found to be successful. They have better developed their waterfronts to get beyond their economic functions and serve as places to socialize, relax, exercise, eat and be entertained.

Waterfront development is an ongoing task that requires extensive planning. DHK has been working diligently to help improve the waterfront design plans while also working with the Hong Kong government. However, there is still more planning to be done in order to create a space that people can enjoy, find easy access, and find attractive and safe, and yet also contribute to Hong Kong's economy.

The purpose of our project was to determine how waterfront cities around the world have dealt with the challenge of making their waterfronts accessible, attractive, enjoyable and financially sustainable so that Victoria Harbour's waterfront can learn from their successes and avoid any mistakes they may have made. Our first objective was to identify and compare the most successful characteristics, specifically the design and makeup of waterfronts, in the selected cities. We identified the laws and regulations surrounding waterfront development, specifically in regards to the construction and operation of private businesses along waterfronts. Finally, based on the results of our research in the selected cities, we developed a set of best practices for

waterfront development, highlighting the most successful ways to integrate public and private sector stakeholders.

2. Setting the Scene

In this chapter we explain how we selected the six cities we studied as examples of successful waterfronts. We begin by describing the importance of waterfronts, including their historical and modern-day effects on the cities they are located in. Then we provide a brief history of Hong Kong and the importance of Victoria Harbour and its evolving functions and waterfront. Finally, we discussed the list of cities we studied and how we determined that they had the best waterfront cities to study as models that Hong Kong could imitate. We explain the criteria we used to narrow down the list of cities to only six for intensive study.

2.1 Importance of Waterfronts

Waterfront areas are important to port cities all around the world. They aid in economic growth, boost urban water resources and improve people's lives (Chai, n.d.). Access to bodies of water such as oceans, seas, lakes or rivers, has been essential to the establishment of many large and successful cities (Hradilova, 2012).

Post-Industrial Revolution, many cities began to deindustrialize (Conlon, 2017). The once booming trading centers were left with abandoned warehouses and unused waterfronts. In the past several decades, communities and governments have come together to revive these mismanaged areas. Not only were they unpleasant to look at, but there was also an increasing need for urban green spaces within cities (Dobson et al., 2021).

The connection between cities and nature became increasingly important to residents in the cities (Hradilova, 2012). Nature is where the people are able to escape the commotion of the city and find serenity. According to Dobson et al. (2021), many studies show that there is a strong connection between good mental health and well-being and access to nature. The creation and maintenance of urban green spaces can significantly improve a city population's well-being. These green spaces include most areas of nature, like parks and access to water. Cities around the world have been working hard to bring back life to their waterfronts and create open spaces that attract people with their accessibility, activities, and spatial arrangements (Hradilova, 2012). One of these cities is Hong Kong.

2.2 Hong Kong

Hong Kong is a bustling region located in the southeastern part of China at the end of the Guangdong Peninsula. It is made up of three sections: Hong Kong Island, the Kowloon Peninsula, and the New Territories (Wong, 2016). It served as an essential trade center for China by connecting its economy and goods to the rest of the world (Encyclopedia.com, 2020).

Today, Hong Kong is the seventh largest city in the world by GDP (GlobalData, 2019). As one of the main attractions in Hong Kong, the Victoria Harbour waterfront is vital for bringing in tourists who spend around $40 billion dollars each year in Hong Kong (*Hong Kong*

Tourism Statistics 1995-2021, 2021). However, Victoria Harbour's waterfront is not operating for everyone's benefit because of private developers' battles over the rights of using public space for commercial purposes, compromising the walkability and accessibility of the space. This is partially due to the money driven mindset of both developers and the government in Hong Kong (P. Zimmerman, video chats, 2021). The government makes their money from leasing land out to developers and charging a premium for sought after land, on which they can make luxury waterfront apartments, or hotels with private patios, which both limit the public's accessibility of the space. There are limited guidelines that define the type of developments allowed on the waterfront, the amount of open space necessary, or maintaining accessible areas along it. This makes it especially difficult for the space to cater to the majority of the people who live and visit in the city. These issues can be better addressed now since land reclamation in Hong Kong has stopped.

Hong Kong is an ambitious city and has sought to expand its reach and accelerate its growth through land reclamation between 1877 and 2020 (Tristan Justin Bove NG, 2020). Land reclamation projects in Victoria Harbour made it very difficult to develop and maintain a consistently attractive waterfront due to the fact that their shoreline had been constantly changing (Skala, 2007). Over 143 years, 70 km^2 of land reclamation has taken place in Hong Kong. This equates to their shoreline changing by several meters every year, making it extremely difficult to manage a single waterfront district since the bounds for the waterfront were not defined. However, since 1997, Hong Kong has classified Victoria Harbour as a public asset in the Protection of the Harbour Ordinance Bill, limiting land reclamation activities that may damage it. In 2004, the Court of Final Appeal finally blocked the Town Planning Board from approving any development that called for land reclamation in Victoria Harbour. Since that ordinance went into effect, DHK and a number of other non-profit organizations, such as the Harbour Business Forum, have been searching for ways to improve Victoria Harbour and turn it into a more appealing space for everyone (Design HK Harbour District, n.d.).

2.3 Successful Waterfront Cities Around the World

In order to discover what determines a successful waterfront city, we conducted some preliminary background research in other parts of the world. In this section we will explain the process through which the top twenty-two waterfront cities around the world were determined. We first searched for the top waterfront cities around the world using the following publishers: Project for Public Spaces, Business Insider, Fodors, Independent, and Travel and Leisure. From each source, we recorded each city they listed and compiled a list of all of the locations, totaling 48 entries. From the initial list of all the city entries, we tabulated the frequency of all the locations mentioned and created a new list of those cities that were mentioned more than twice. This final list of twenty-two cities with successful waterfronts can be found in Appendix D.

We chose to look at lists provided by several organizations including ones that focus on urban development and travel. Project for Public Spaces (2008), is an urban development group

that has worked with "over 3,500 communities across 50 countries" (p. 1), helping them improve their urban and waterfront designs so we took their list into account.

We also looked at the list provided by Business Insider and Fodors. The Business Insider is a well-established news website that used the list of "top 25 waterfront cities in the world" (Avakian, 2016, p. 1) provided by the Chicago Line Cruises to combine with the business knowledge that they have to create a detailed list of waterfront cities. Fodors is a travel guide organization that provides detailed excursions for tourists around the world (Wasserman, 2014). They do in depth research of an area before developing a guide for them. Emily Wasserman, the writer of Fodor's list, offers a collection of 15 cities around the world with exceptional waterfronts.

The British newspaper, Independent, also created a list of the best waterfront cities around the world. The author Tamara Hinson (2018) provided a collection of the ten best waterfronts around the world. This British paper brings a different perspective to the search for the best waterfronts, as it is not an American resource. The list mentions cities all around the world. We also looked at the list curated by Travel and Leisure (2020). It is a travel magazine based in New York City, so it brings an American point of view to the best waterfronts around the world. Its author, Ann Shields (2010) created her list based on the guidance of Project for Public Spaces (PPS). Each location is analyzed and studied based on the number of many attributes including cafes, historic sites, gardens, or shops. Shields provides a quote about each location and its highlights from PPS, as well as an additional one from Travel and Leisure, bringing together the two perspectives.

The twenty-two cities that appeared most frequently based on our research as being the most remarkable waterfront cities around the world, were then analyzed more carefully to arrive at a smaller number that were most similar to Hong Kong. We characterized each city, including Hong Kong, by the type of property along the waterfront, length of the coastline, and other criteria and put this data in a Google Spreadsheet which can be found in Appendix D. Cities across the world use different tactics to make use of their waterfronts. For example, San Sebastian focuses more on beachfront property because the climate allows for it, so their beaches are very popular (Google, 2020). However, the climate and geography of Hong Kong's Victoria Harbour, does not contain beaches. Due to this, we did not select a city with a focus on beachfront property. Another example would be a city like Venice, which was very popular; however, it contains so many rivers and smaller bodies of water inside its boundaries which differ too much from Victoria Harbour to draw similarities between them (Google, 2020). After analyzing each of the 22 cities based on our most important criteria, we chose Baltimore (USA), Chicago (USA), New York City (USA), Singapore, Sydney (Australia), and Vancouver (Canada) for in-depth study. They all share a balance between being popular and similar to Victoria Harbour.

With this information we were able to begin conducting further research on these final cities with the chosen methods.

3. Our Research Process

The purpose of our project was to provide conclusions on the success factors of six different waterfronts around the world in order to help DHK identify ways for HK to develop its waterfront more effectively. In this chapter we will list the three objectives we achieved in order to accomplish our goal and explain the research methods we used to attain each objective.

3.1 Objective 1: Identify and compare the most successful characteristics, specifically their design and makeup, of waterfronts in the selected cities.

The first method that we utilized in the attainment of Objective 1 was archival research. We researched each waterfront's history, the ownership of waterfront property, funding of waterfront development and management, who the developers of the waterfront were, what kind of developments were allowed, the guidelines and zoning laws in place, and the actual physical status of the waterfront for the following six cities: Baltimore, Chicago, New York City, Singapore, Sydney, and Vancouver. To complete research on each waterfront's history, ownership of waterfront, funding of waterfront, who developed on the waterfront, what kind of developments were allowed, and the guidelines and zoning laws in place, we used official government sites and the websites of official waterfront organizations in the city being studied. In order to gather this information, we also used past research reports that have already studied the development situation in some of the cities selected. We utilized satellite images from Google Earth and Google Maps in order to gather data on the current physical status of each of the waterfronts studied. Due to the fact that we were not able to visit any of the waterfronts in person, archival research was the backbone of our investigation as a lot of information was easily accessible online and in publications.

The second method that we utilized in the attainment of Objective 1 was semi-structured interviews. We conducted semi-structured interviews with two groups of people in four of the six selected cities. Interviewees included people who: 1) work in waterfront development, and 2) have developed private businesses on the waterfront. The selection of the interviewees was based upon an initial contacting of a large list of potential interviewees that then was reduced based on the availability of the individual. The information gathered assisted us in understanding more about the development of each of the selected waterfronts. We interviewed eight individuals in Baltimore, Chicago, New York City, and Sydney. These cities were selected as opposed to Vancouver and Singapore due to the availability of the professionals we had identified. The specific questions for the interviews conducted are in Appendices B & C.

The third method that we utilized in the attainment of Objective 1 was a survey. The survey was given to waterfront users as an alternative to a semi-structured interview. The intent was to engage people to participate in the study and to gather data on the most popular places in each waterfront area. Posts on the Instagram app were posted on each of the team member's personal social media accounts. The posts included a yes or no poll of whether the responder had visited the city mentioned. This was done for all six cities. We then gathered the data of the yes

responses and contacted these individuals with the survey. We contacted individuals who had previously visited Baltimore, Chicago, New York City, Singapore, Sydney and Vancouver. The total responses of the survey were 148. The information gathered assisted us in understanding more about the preferences of tourists. The specific questions in the survey's questionnaire are in Appendix D.

3.2 Objective 2: Identify the laws and regulations surrounding waterfront development, specifically in regards to the construction and operation of private businesses along waterfronts.

The first method that we utilized in the attainment of Objective 2 was archival research. We studied the official websites of the departments and organizations involved in the development of waterfronts for each of the selected cities. We investigated the zoning laws/maps, development guidelines, and project plans in each of the six cities. Some of this information was also provided by interviewees for a specific city.

We also interviewed specialists from waterfront development organizations and members of each city's urban planning departments. We conducted a total of seven interviews: three with members involved in waterfront development in New York City, two with individuals from businesses on the waterfront in Chicago, and two with members of waterfront development in Baltimore. We also spoke with an individual involved in city planning in Sydney. We asked them about the finer details surrounding the laws and regulations in order to draw connections as to which have been the most effective and why. The questions and interview protocol are available in Appendix B.

Additionally, we were invited to the 2021 Regional Symposium: Recovery and Resilience in A New Era hosted by the Waterfront Alliance in New York City to learn more about their guidelines. We also attended a feedback and review session of Harbor Point design plans to learn more about the design processes in Baltimore.

3.3 Objective 3: Based on the results of our research in the selected cities, develop a set of best practices for waterfront development, highlighting the most successful ways to integrate public and private sector stakeholders.

The methods that we utilized in the attainment of Objective 3 were a combination of content and narrative analysis. We conducted a content analysis of the information we received from the archival research and a narrative analysis of the conversations in our interviews.

We then analyzed our data, looking for commonalities, differences, and any other trends we found to arrive at our conclusions. Specifically, we studied the history of the waterfronts, what shaped them into the destinations they are today, what laws and regulations served as guidelines during the design process, and what components of the waterfronts were created to

bring people to them. This comparison process led us to our final conclusions surrounding the components of a successful waterfront and how laws and regulations played a role in shaping it.

4. Our Findings

In this chapter we discuss our findings and analysis of these findings from our research. We included findings from each individual city, which we then used to compare all the cities to each other. The chapter concludes with an analysis of what a successful waterfront looks like.

4.1 Baltimore Findings

The Port of Baltimore is a historic harbor that has been a center for different industries in the city for over 300 years. From 1970-1980, the city began to redevelop its waterfront because the port activity migrated from the Inner Harbor area of the Port to the Canton area, located further out of the harbor next to Fells Point. The Inner Harbor has now become a booming tourist destination that the city relies on (Gerena, 2003).

Figure 1

Map of Inner Harbor, Baltimore
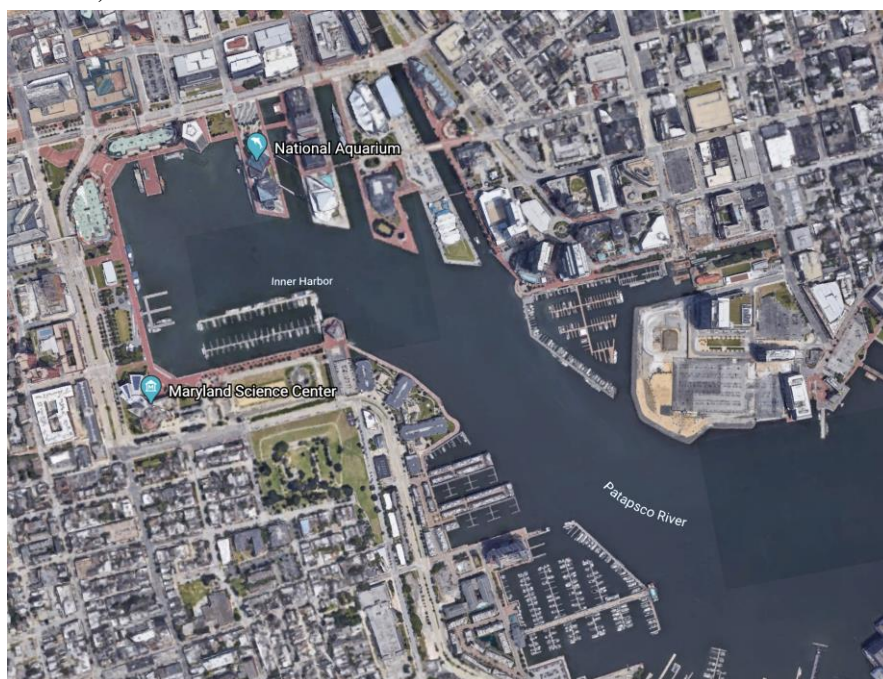
(Google, 2020)

The Inner Harbor promenade is a public walkway along the water of the harbor sector (City of Baltimore, 2018). The walkway is wide and has a clear view of the water. There are a variety of different shops, restaurants, and hotels sitting on leased private land next to the public promenade walkway. Figure 2 shows the interface between the public walkway and the private leased land. The restaurants with outdoor seating on the promenade are part of the private property while the public property encompasses the walkway at the edge of the water.

Figure 2

View of Inner Harbor with Annotations on Private and Public Property

(Google, 2020)

The Inner Harbor promenade allows for a clear, accessible, and visible connection to the harbor due to its unobstructed path to the water. The area also includes an aquarium and a museum beside the promenade that serves as fun educational activities. It also has attractions such as available boat-based restaurants and paddle boats for people to enjoy, get exercise, and further connect with the water. The West Shore area of the harbor features the West Shore Park, a public promenade plaza that has recreational green areas, a fountain, and occasionally features concerts. The greenery also increases the sense of connectivity with nature created by the water. Having these areas within an urban setting adds to the sustainability of the city by increasing green spaces (Google, 2020). Activities on the park sponsored or co-sponsored by the city are allowed with permits. Figure 3 shows the design sketch for the West Shore of Inner Harbor and Figures 4-6 images from the area.

Figure 3

Design Sketch of West Shore Inner Harbor, Baltimore
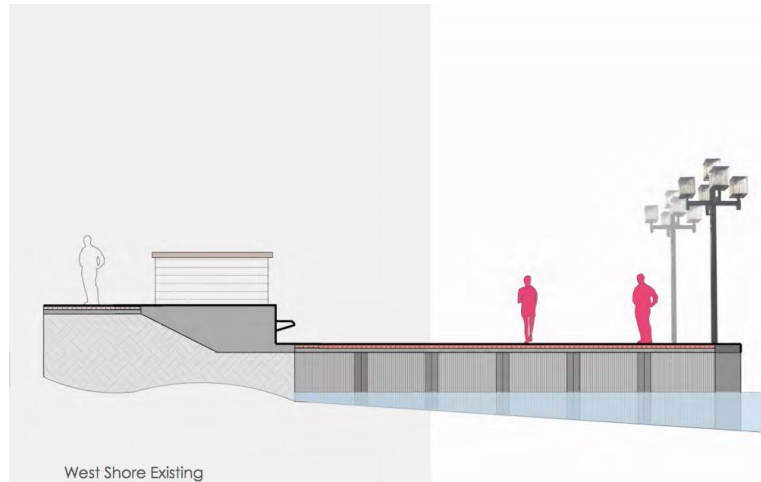
(Baltimore City, 2013)

Figure 4

Stores on West Shore Inner Harbor, Baltimore
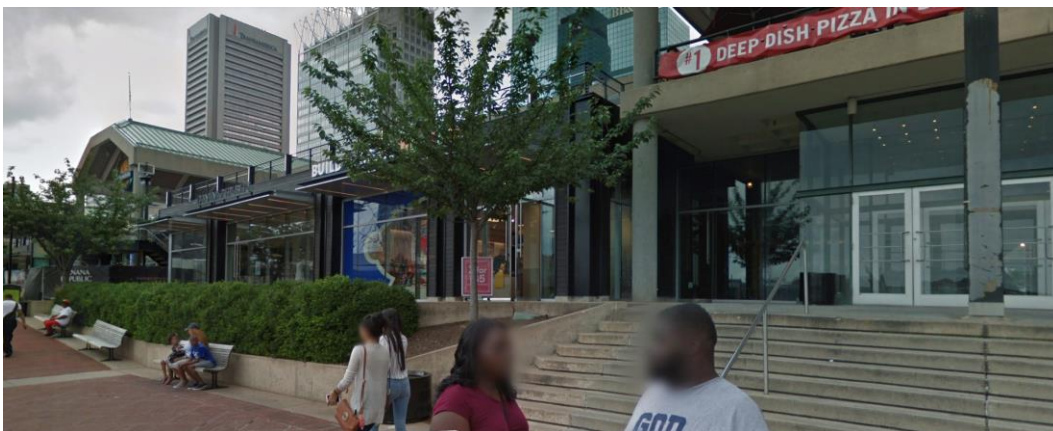
(Google, 2020)

Figure 5

Walkway on West Shore Inner Harbor, Baltimore
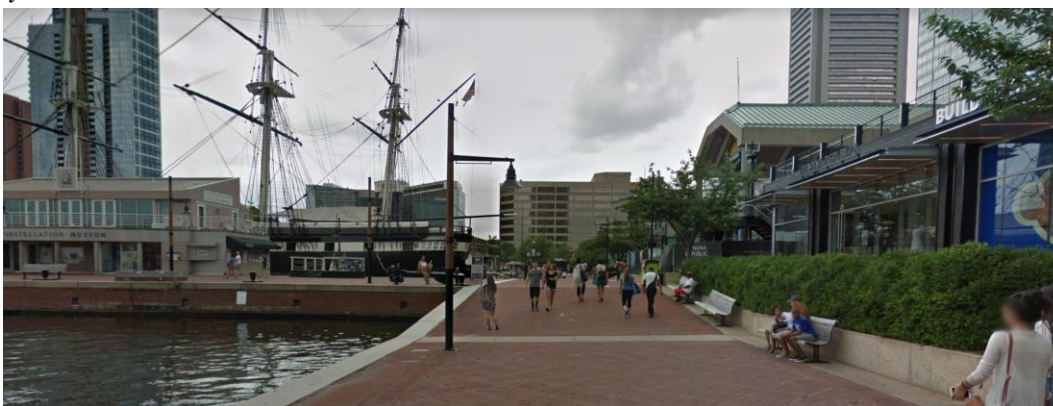
(Google, 2020)

Figure 6

Walkway on West Shore Inner Harbor, Baltimore
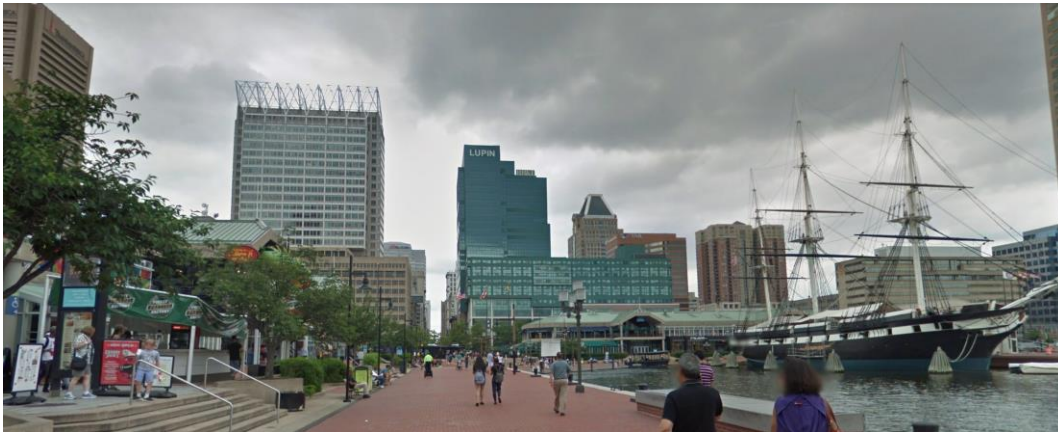
(Google, 2020)

There are walkway steps that lead into the water in front of the museum on the south shore of the promenade. Figure 7 shows the design diagram for the South Shore of Inner Harbor and Figures 8-9 images from the area.

Figure 7

Design Sketch of South Shore Inner Harbor, Baltimore

South Shore Existing

(Baltimore City, 2013)

Figure 8

Walkway on South Shore Inner Harbor, Baltimore

(Google, 2020)

Figure 9

Walkway on South Shore Inner Harbor, Baltimore
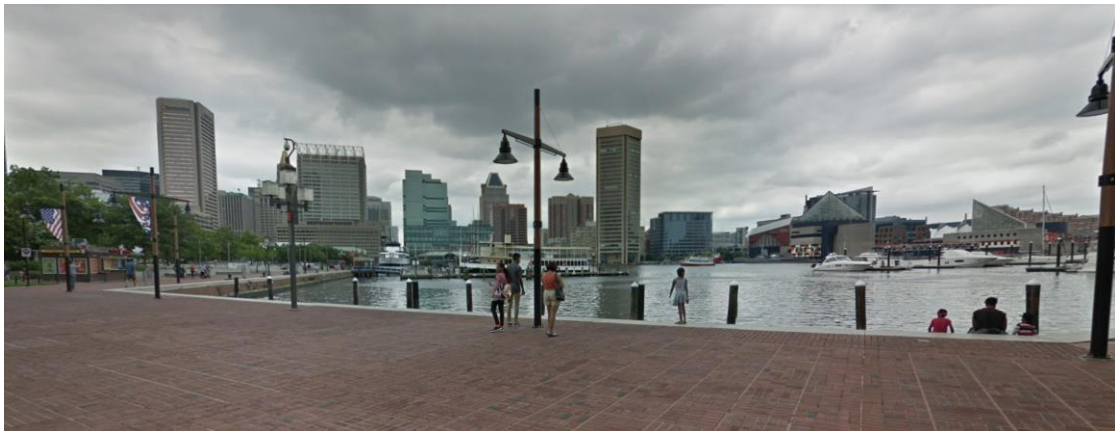
(Google, 2020)

The Baltimore Inner Harbor is a popular section of the Port of Baltimore that is designed to provide a connection to the water and greenery of nature as well as a variety of different attractions for all age groups. The continuous u-shaped and uniform walkway creates the sense of a unified waterfront that gives a round view of the water. The variety of developments make the Inner Harbor an inviting part of the city that promotes outside gatherings away from the urban setting of the city. The concise 2.4 km promenade is a diverse attraction for both tourists and locals to enjoy the city of Baltimore.

The Inner Harbor section of the Baltimore promenade is defined as a "public pedestrian walkway/shared use bicycle path that functions as a waterfront sidewalk for development sites and public spaces that have emerged from the former industrial waterfront"(City of Baltimore, 2018, p.1). It is a mixture of private and publicly owned land. The Inner Harbor walkway is all public yet the surrounding establishments each have leases or are privately owned. In fact, any activities on the Inner Harbor promenade must be free of charge according to the Inner Harbor Area Guidelines. According to the document Baltimore Inner Harbor Economic Impact,

Importance, and Opportunities for Investment by the Waterfront Partnership of Baltimore, Maryland Economic Development Corporation, and Maryland Department of Business and Economic Development, about 60% of all Baltimore visitors also visit the Inner Harbor.The terms of these leases or easements on portions of the promenade that are privately owned must adhere to a Promenade Easement agreement that details the public access guidelines. An example of one of these easement agreements of a private developer with the City of Baltimore can be found in the Appendix P.

The Inner Harbor is on C-5 zoning, meaning the district is divided into a series of sub-districts that provide design standards to recognize and achieve the different physical characteristics of Downtown, according to the Baltimore Department of Planning (2018). Under the Inner Harbor Areas and Guidelines it is underlined that the privately controlled sections of the Waterfront Promenade are owned in fee or controlled privately under long-term ground leases. Developments on private land consult with a Site Plan Review Committee (SPRC) that provides joint recommendations in "coordinated inter-agency review to ensure that, at a minimum, proposed development complies with the Comprehensive Plan, Baltimore City Zoning Code, Subdivision Rules and Regulations, Building Codes, Environmental codes and regulations, and other commonly accepted planning, transportation and institutional guidelines and requirements" (City of Baltimore, 2018, p.1). This review process was established to guarantee a "safe, functional, environmentally sound, aesthetically responsive, efficient and orderly development with high standards of design" according to the Baltimore Department of Planning. Efforts such as this are essential for a well-developed waterfront. Non-Profit Organizations such as Waterfront Partnership and the Downtown Partnership of Baltimore also play an essential role in the management of the area. The Waterfront Partnership of Baltimore (2017) was formed by property owners who work on the up-keep of the promenade and function using Special Benefits for funding as well as private events on the waterfront, corporate contributions/sponsors, and some contribution from the City of Baltimore.

Baltimore contains many different entities, departments, and organizations involved in the upkeep and design of the waterfront such as the ones mentioned before. Although the government owns only part of the waterfront, it maintains a level of control through easements with the private developers and the Site Plan Review Committee to oversee the process. Inner Harbor is a good example of a part of the Port of Baltimore that displays successful outcomes using thorough waterfront planning with easements and with the SPRC process.

4.2 Chicago Findings

Chicago is a large city located in Illinois, United States, that sits on the western side of Lake Michigan (Google, 2020). Chicago is home to 42 km of open lakefront and 600 parks (City of Chicago, n.d.). The city of Chicago is distinct and vibrant due to its large green areas having more than 33.6 km^2 of green space. The Chicago waterfront, although industrial in the 19th century, began repurposing its waterfront by the beginning of the 20th century. The reason this incentive was possible is because aside from the industrialization of the waterfront bringing

many jobs, it also brought pollution and drinking water problems. In 1909, the Plan of Chicago was devised by architects to adjust the needs of the city. This plan detailed an improvement of the waterfront, acquiring a park system, and a plan for unity of the city. One of the present day results of this plan is the 25 miles of lakefront that serve as public land (Chicago Historical Society, 2005). Figure 10 displays the section of Chicago where the Chicago Riverwalk meets Lake Michigan.

Figure 10
Satellite Image of Chicago, Illinois
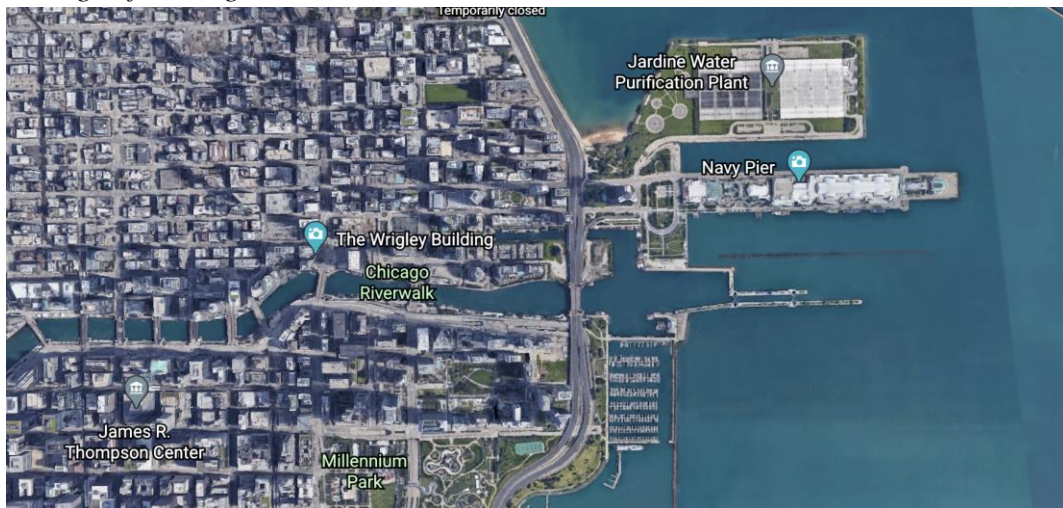
(Google, 2020)

The walkway features cafes with outdoor dining that allow for the enjoyment of the view. There are also boat attractions such as tours and kayaks for a closer interaction with the water and nature. Although most of these available activities are seasonal due to Chicago's climate, they make the Chicago Riverwalk an accessible and enjoyable space. Figures 11-13 displays some pictures of the walkway.

Figure 11
Walkway on Chicago Riverwalk, Chicago

(Google, 2020)

Figure 12
Walkway on Chicago Riverwalk, Chicago

(Google, 2020)

Figure 13
Chicago River, Chicago

(Google, 2021)

The City of Chicago has an extensive review process for Planned Developments on the Chicago Riverwalk as shown in Figure 14.

Figure 14

Diagram of Review Process for Planned Developments in Chicago Riverwalk
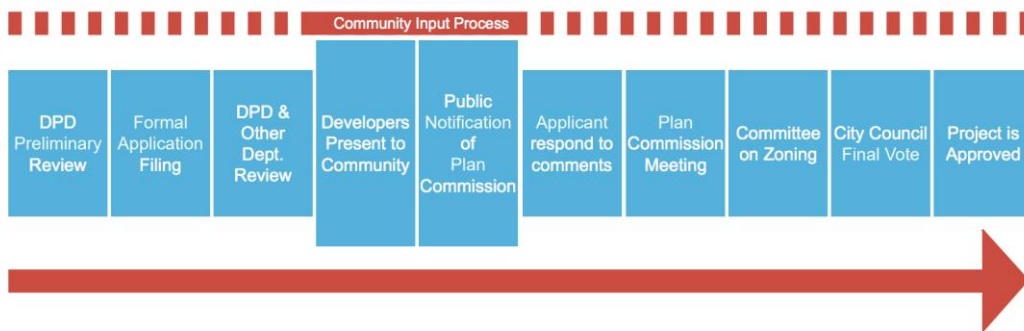
(Chicago Department of Planning and Development, 2019)

This review process ensures that all developments follow the same standard. The document for the 2019 Chicago River Design Guidelines details specifications on the multi-use path, the furnishings, the seating and gathering areas, lighting, wayfinding and signage, landscaping, and different water area treatments (Chicago Department of Planning and Development, 2019). The link to this document can be found in Appendix P. This detailed document is key for clear communication of the proceedings among all the stakeholders of the waterfront development. Having every development go through this process ensures

communication throughout all entities involved and clarity on the plans, regulations, and opinions. This process also aids the idea of having a unified waterfront, as the City Council must approve all developments on the Chicago Riverwalk. This means this one body of people review all of the developments and follow the same procedures with each. If all of the developments are viewed and evaluated in the same way, then the waterfront will follow the same set of rules in all parts and create one cohesive space instead of multiple establishments with different design guidelines.

Establishments on the Chicago Riverwalk are zoned for different purposes, such as commercial or residential. The private establishments on the Riverwalk must follow a set of design guidelines which include: public access, path width, paving material, furnishings, seating areas, lighting, signage, landscaping, and others. Due to these rigorous standards, the walkway displays public open space areas where both tourists and locals can appreciate the waterfront view. Currently, 48% of the 862 km (536 miles)of river shoreline is publicly owned, 75% of the 862 km (536 miles) of river shoreline has a natural edge, over 149 km^2 of open space are located within a 0.8 km (1/2 mile) of the Chicago River system, and 76% of this open space is publicly owned property (Friends of the Chicago River, 2021). These elements of nature and open space within an urban area give Chicago its pleasant atmosphere and character.

Chicago also features the Navy Pier, a pier on the coast of Lake Michigan with shops, restaurants with outdoor seating, short-term activities such as concerts, events, a ferris wheel, boat attractions, and a nearby public park. The large pier appeals to all age groups and also allows for indoor attractions, like shops and the Chicago's Children Museum, when the weather does not permit outdoor activities. Having these different, and in some cases seasonal, activities is one of the main advertised qualities of the Navy Pier (2020).

Figure 15
Picture of Navy Pier, Chicago

(Verch, 2017)

The location of the pier is not in the center of the city, but rather on the shore of the lake, which provides an experience of the waterfront away from the dense built up area of the busy city. The Navy Pier Non-Profit organization provides free events year round, available for the public. The cruises and boats on the pier also provide a variety of activities such as boat restaurants, in-city tours, fireworks rides, and speed boats. This variety of entertainment venues allows for different ways of providing interaction with the water. The non-profit engages locals and tourists of different age groups with the different permanent and temporary attractions.The Navy Pier's variety of activities is essential to its popularity. Figures 16-18 display some sections of the versatile Pier.

Figure 16
Walkway on Navy Pier, Chicago

(Google, 2020)

Figure 17
Walkway on Navy Pier, Chicago

(Google, 2020)

Figure 18
Walkway on Navy Pier, Chicago

(Google, 2020)

A large majority of Chicago's waterfront is zoned as public and in order to develop on it, a special zoning needs to be given by the government (Chicago Department of Planning and Development, 2014). Establishments on the water-edge are zoned for different purposes, such as commercial, residential, open space and some as special. An example of this is the previously mentioned Navy Pier with special zoning run by the Navy Pier Non-Profit organization. In contrast, the privately zoned land on the Chicago Riverwalk must meet certain design guidelines of the Planned Development of the City of Chicago which includes that "the property owner will need to provide un-gated and unobstructed public access to the minimum required setback area"(Chicago Department of Planning and Development, 2019, p.23). The document also specifies the property owner must be responsible for maintaining and managing the river setback area to ensure the riverfront is clean. The property owner will also need to "provide sufficient liability insurance coverage for the riverfront's public use" (p.23). It is clear the government has an active role in assuring open space is available for the public. This along with the clear guidelines make the waterfront a diverse and engaging one. Although there are a number of privately owned businesses on the Riverwalk, they have specific leases with the City of Chicago.

The City of Chicago developed its waterfront as mostly public space for the locals to enjoy from the early days. This means the government has a big responsibility and says in almost all of the disputes and designs that go on waterfront property. The city also has specific design guidelines detailed on their government page for different types of developments. The government, being the main influencer for all things on the waterfront, provides a standard for the whole city creating a sense of unity and natural flow in these areas and giving Chicago a great successful waterfront enjoyed by both locals and tourists.

4.3 New York Findings

New York City has approximately 837 km (520 miles) of waterfront (NYC Department of City Planning, n.d.). The waterfront is divided into several zones: residential, manufacturing, and parks (NYC Planning, n.d.). There are many designated waterfront areas located around the city. The Brooklyn Bridge Park, running 2.1 km (1.3 miles) long, stands out as one of the more impressive ones. It is located in Brooklyn along the East River, just south of the Brooklyn Bridge and is in an area officially classified as a manufacturing zone.

There were several guidelines and understandings that were agreed upon in the initial planning process of the Brooklyn Bridge Park (Brooklyn Bridge Park, n.d.). The Local Development Corporation spent a year carrying out a public planning process to create the Illustrative Master Plan. This was approved by the Governor and Mayor of New York City in 2002 when they signed a Memorandum of Understanding (MOU) and created the Brooklyn Bridge Park Development Corporation (BBPDC).

The BBPDC was responsible for planning the park in more detail following the guidelines set out in the Illustrative Master Plan (Brooklyn Bridge Park, n.d.). As part of the MOU, it was agreed upon that the Brooklyn Bridge Park was to be created using funding provided by the State of New York and the City of New York. It also required the park to be self-sufficient and provide capital to fund its future maintenance and operations. In order to do so, it needed to establish some commercial activity to generate the funds.

The planning committee had to thoroughly think through how to balance free, publicly accessible land with revenue generating activities (Brooklyn Bridge Park, n.d.). Initial development plans involved charging for recreational activities, local retail, residential areas, and a hotel. All of these entities were privately owned and operated.

These plans were shared with the surrounding community for feedback (Brooklyn Bridge Park, n.d.). The public communities were involved in the decision-making as they were the targeted visitors and should have a say in the development. After each feedback session, the proposal was updated and shared with the public again. This led to a plan that was approved by all stakeholders and led to the development of a successful waterfront. The park has been built in sections, with future section plans constantly being evaluated and updated. They created a map outlining each section of the Brooklyn Bridge Park. It indicates where new buildings were developed and which ones were restored, in an effort to create a more cohesive waterfront. It clearly divides up areas along the waterfront into what roles they were to serve. It indicates which areas already had existing establishments that were going to be incorporated into the park design, such as the Main Street City Park and the Fulton Ferry State Park. It also indicated where the residential and commercial buildings were going to be developed and what was planned around it.

There are several elements of the park that were rigorously thought-out and planned for in the General Project Plan published in 2005, found in Appendix E. This detailed document was created in coordination with the strict guidelines set for the construction of the process. These guidelines are outlined in the Final Environmental Impact Statement, which includes regulations

surrounding park and construction noise, land use, zoning and public policies and can be found in Appendix P.

The plans include many recreational activities throughout the park (Brooklyn Bridge Park, n.d.). There are multiple water access points throughout the park, including a beach, a marina, and areas visitors can use for non-motorized boats. The park plans also include designated bike paths and outdoor seating areas. A unique feature of the park is the amount of sports fields on it, including soccer, volleyball, and basketball courts. Some of the fields require a permit and fee, which is used to fund the operations of the park. There are also playgrounds, running paths, and a roller skating rink. These are some examples of the large variety of developments throughout the waterfront that keep people coming back to it. There is always something new to try and plenty of activities to participate in.

Figure 19
Kayaking in Brooklyn Bridge Park

(Valente, 2020)

Figure 20
Soccer Fields on Brooklyn Bridge Park

(Tdorante10, 2019)

There are several restaurant and retail zones located throughout the length of the park (Google, 2020). Most of these were developed by different private developers that were appointed by the Brooklyn Bridge Park Conservatory (Brooklyn Bridge Park, n.d.). Many worked in partnership with other organizations that were important to the Brooklyn region. These areas serve as one of the most important forms of income for the park. They were worked into the planning documents as private developments working alongside the publicly accessible open spaces surrounding them.

There are several restaurants located throughout the park. Most include plenty of outdoor seating which is heavily used during the warmer seasons . The park includes connected commercial developments which include dining on the ground floor. These areas can easily be seen from the waterfront, but are guarded by shrubs and greenery to give a feeling of privacy.

Figure 21
Private Development Along Waterfront
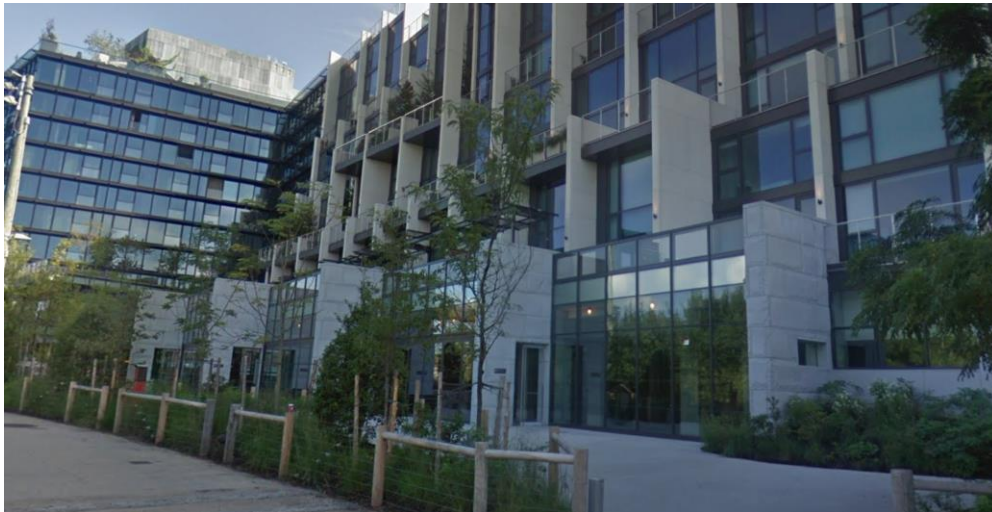
(Google, 2017)

There are also stand-alone restaurants throughout the park, like the Ample Hills Creamery. This building also features a green roof which supports the parts sustainability efforts by adding greenery and reducing the amount of energy needed to heat or cool the establishment.

Figure 22
Ample Hills in Brooklyn Bridge Park

(Google, 2014)

The area also features some unique dining experiences along the waterfront. The restaurant PILOT is run on a sailboat that is docked, right off of Pier 6. Visitors are able to connect with the water while enjoying their meal, while feeling the sea breeze and seeing the incredible views of Manhattan across the water.

Figure 23
Restaurant PILOT in Brooklyn Bridge Park

(Google, 2017)

The area and streets directly behind the park offer a variety of commercial and retail areas. The area upland from Pier 1 was developed by a partnership between Starwood Capital and Toll Brothers City Living. This development was meant to be multifaceted with areas of residential and commercial activity.

There are several entrances from the development onto the waterfront; however, there is a small fence that separates the walkway from the building. This is to provide a sense of privacy for the guests and residents of the hotel and residential areas. It is still visible to all waterfront visitors, but appeals to potential residents of the building as well.

The waterfront also features the Empire Stores, which were old cargo warehouses re-developed by Midtown Equities (Empire Stores, n.d.). They worked with the Brooklyn Historical Society DUMBO to preserve the old industrial charm by saving the original warehouse architecture, such as the brick masonry, iron-shuttered windows, and hoisting wheels. Visitors are able to experience feelings of nostalgia when they visit this area, as they are surrounded by the original structure. They include a mix of restaurant, retail and event space. There is also a space for the Brooklyn Historical Society to occupy. The shoreline features rocky edges which are more durable than solid marine walls and do not collapse as easily as vertical bulkheads do. It contributes to establishing storm resiliency.

Figure 24

Empire Stores Along Waterfront in Brooklyn Bridge Park

(Empire Stores, 2017)

The John Street Development, a new commercial building project along the waterfront, followed a similar planning process as other areas of the park (Brooklyn Bridge Park, n.d.). This process is called the Request for Proposal process. There were several teams that drafted up development plans for this area. The eleven proposals were presented to the community and other stakeholders and the best one was selected. Some example design plans can be found below.

The John Street development was developed by a partnership between Alloy Development and Monadnock Development. This is a residential building with the ground floor designated for retail and cultural space. The latter area was occupied by the Brooklyn Children's Museum. The park behind it is smaller than other Piers along the Brooklyn Bridge Park, serving as a hidden sanctuary for locals to hide away from the crowds. There are several tables and chairs outside for people to relax at. There is also a large grassy area which allows people to see stunning views of the city and bridge.

There is plenty of seating throughout the park. These areas include picnic areas with large grassy openings for visitors to sit and rest on, as well as barbecue sections with long communal tables with umbrellas to provide shade. These are all freely accessible to the public and are located right along the water to offer beautiful views.

Figure 25
Public Picnic Tables in Brooklyn Bridge Park

(Google, 2017)

Figure 26
Public Seating in Brooklyn Bridge Park
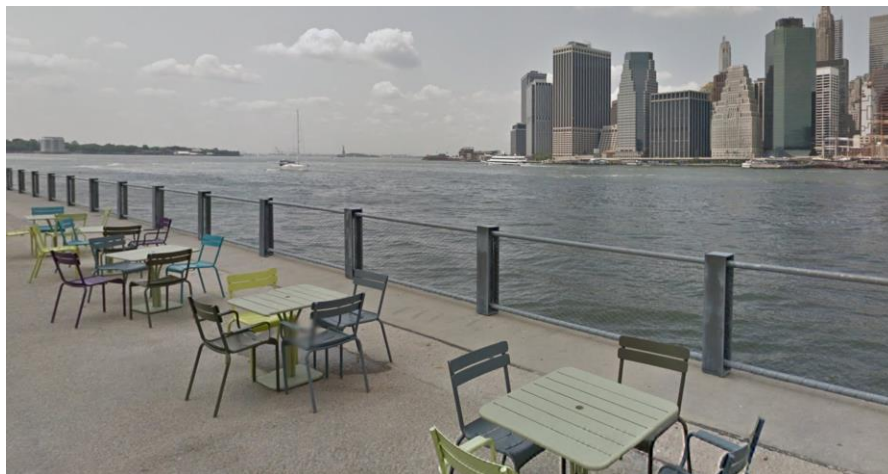
(Google, 2017)

Overall, the Brooklyn Bridge Park successfully creates a well-integrated space where the old and new developments were worked into the original park plan. The community engagement ensured that the area created would be consistently visited. In order to ensure this park will survive for years to come, the plans included areas of sustainability and resiliency, by taking steps to combat future rising sea levels and preserve the marine life around the area.

4.4 Singapore Findings

Singapore is a small city-state island with plenty of waterfront areas. We studied the Marina Bay in particular, due to its many attractions and successful integration of private developments and public walkways. It is located near the Downtown Core of Singapore and

flows out into the Singapore Strait (Google, 2020). The waterfront is surrounded by land on three sides, which creates a sense of enclosure and safety. All of the walkways around the water are accessible by the public and are connected, with pedestrian-only bridges connecting the walkway over water.

The Marina Bay was designed and developed by the Urban Redevelopment Authority (URA), which plays many roles in Singapore's development (URA, n.d.). They are in charge of evaluating and granting planning approval, act as the main government land sales agent, and partner with local communities to create lively areas people are eager to visit. In order for a project to be approved, it has to go through an extensive review process, during which all of the stakeholders are talked to, including the URA, the private developer, and the local community around it. The latter is specifically important, because they will be the ones who live and interact with the space most often. These places must be designed for the people.

The URA looked at the Marina Bay waterfront holistically during the initial design process. The Chief Urban Designer of the area, Mdm Fun Siew Leng (2020), admitted there were concerns of the area being viewed solely as a business hub, so she worked diligently "to ensure that all waterfronts [are] not privatised but be accessible to the public" (para. 5). They thought out the integration of public and private sectors to ensure a well-connected and accessible area that still promoted commercial activity. These efforts resulted in several publicly-accessible parks, promenades and plazas along the waterfront.

URA also developed several areas for open space events such as The Float for national-scale events, the Esplanade Theatres by the Bay, museums, hotels, restaurants, and malls (Google, 2020). The Marina Bay offers a large variety of developments all along the promenade. These establishments allow for a diverse number of activities for visitors of all ages to visit. The business people from the financial hub can enjoy lunch at the restaurants, tourists can stay at grand hotels with incredible views, and locals can come support their favorite sports teams at the stadium.

The design plans focused on developing buildings that had the first floor open to the public, allowing them to walk through buildings instead of around them (Leng, 2020). Asia Square was the first to set aside 25% of its ground floor space for city rooms which were accessible by the public.

URA ensured the walkway directly along the water is public land and can not be obstructed by private entities (URA, n.d.). Additionally, they require certain private developments to include public spaces within them. There are several guidelines set in place to ensure public space is provided within private developments for the visitors of the waterfront.

Certain developments are required to incorporate public spaces, which can be open spaces or covered public spaces with clear visibility (URA, n.d.). These public areas are required to be accessible at all times and connected to key pedestrian routes along the basement, 1st story, and 2nd story. The full guidelines can be found in Appendix I.

An example of public space within a private development can be found in Figure 27. This is a Privately Owned Public Space at the Asia Square Tower. These guidelines were constructed

with the visitor in mind, by ensuring private developments are well-incorporated and accessible. More information can be found in Appendix I.

Figure 27
POPS in Asia Square Tower

(Jesse, 2011)

The goal of the pedestrian network is to seamlessly connect the waterfront across all public and private developments, transportation areas, and other key attractions (URA, n.d.). Additionally, all developments are required to provide covered walkways at the 1st story and should be kept obstruction-free at all times. There are guidelines surrounding the size and length of the walkways, as well as the material that can be used. The design, paving pattern and sample of paving material have to be submitted for approval at the Provisional Permission stage. Some developments are required to include through block links or view corridors to better connect the street to the waterfront promenade. The Underground Pedestrian Link works in coordination with the 1st story pedestrian network and is connected through vertical circulation points, which must include an escalator, staircases and two passenger lifts. It also provides access to the Rapid Transit System Stations. This network runs along the 2nd floor and also requires vertical pedestrian circulation points. They must remain open for public use at all times. The full guidelines can be found in Appendix I.

There are several shopping malls and other commercial areas along the waterfront that bring foot traffic to the area (Google, 2020). These include The Shoppes at Marina Bay Sands

and One Fullerton. Both have large and welcoming entrances on both the street and waterfront sides, to attract people from both directions. The full guidelines can be found in Appendix I. The One Fullerton Mall includes a through block link which allows visitors to easily access the waterfront from the street. An image of it can be found in Figure 28.

Figure 28
View Corridor in One Fullerton

(Google, 2018)

The Marina Bay offers many dining locations along the waterfront. Many offer outdoor dining with beautiful views of the Bay and the Downtown Core behind it.

Figure 29
Outdoor Dining in The Shoppes at Marina Bay

(Google, 2018)

The Marina Bay also allows for food trucks to operate in designated locations around the waterfront (URA, n.d.). In order to reserve a spot, operators have to complete an application with the URA for a permit and pay a fee.

The waterfront also has multiple entertainment venues (Google, 2020). It has an outdoor theater right along the waterfront, the Esplanade. The stage juts out into the water and the seats are placed to face the bay and the Downtown Core skyline behind it. Further along the waterfront is The Float at Marina Bay, the world's largest floating stadium. It also has a large stadium big enough to fit 30,000 people (The Stadium Guide, n.d.). This brings in both tourists and passionate local sports enthusiasts to support their favorite teams. It can also be converted into a concert venue (Google, n.d.). It is pictured in Figure 30.

Figure 30
The Float Stadium in Marina Bay
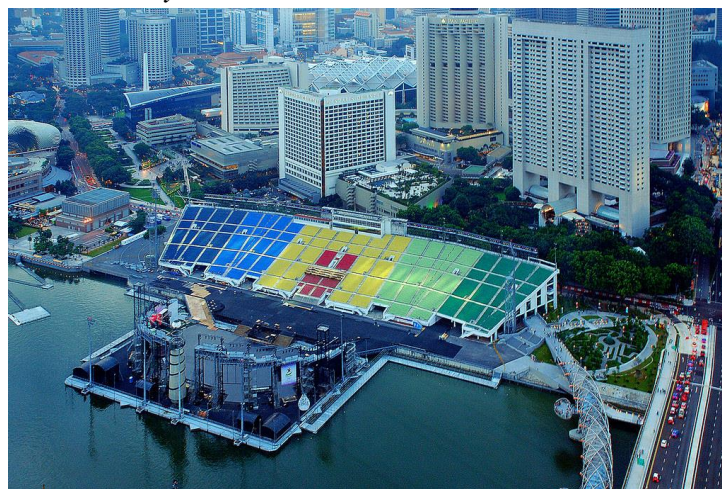
(Shing, 2010)

Further down that side of the promenade is a large Ferris Wheel which provides a spectacular view of the entire city (Google, 2020). There are also several museums and parks along the waterfront. These include the Red Dot Design Museum and the Art Science Museum. Both have grand entrances onto the waterfront area. There are also several parks along the walkway including the Flower Dome and Cloud Forest, and the Gardens by the Bay. Another way of incorporating more green space into the Marina Bay is by adding plants and shrubs to different levels of skyscrapers. Singapore guidelines outline that all greenery destroyed or removed during construction has to be replaced somewhere on the development.

All of these developments, shops, and parks are well integrated with the overall waterfront. They can be easily accessible from any direction.

4.5 Sydney Findings

Sydney's Port Jackson harbour is classified as a drowned river valley (a ria) with a coastline of 317 km (197 miles). The waterfront itself is separated into several zones: residential, commercial, parks, and beaches being the majority.

The history of Sydney shows the transition of the harbour from industrial to a place of recreation for the people. Between the 1800s and the late 1900s, Sydney had a functional port for both cargo and passenger boats (*History of the Port of Sydney*, n.d.). Ships were the main technology connecting the world together and the harbour reflected that by hosting deep and large wharfs and massive fuel bunkers. With the advent of air travel, Sydney started to shift to commercializing the port and creating parks and beaches along the coast as well, effectively turning the space into one for the people.

Figure 31
Sydney's White Bay Industrial Terminal

(Google, 2021)

The Circular Quay stands out as one of the most popular areas as it is right next to the Sydney Opera House, a masterpiece of late modern architecture that draws 4 million visitors every year (*World Heritage Places - The Sydney Opera House*, n.d.) and has nearby parks, and very diverse commercial establishments. There is a large variety of shops and types of developments in this area, including cafes, bars, multicultural restaurants, and boat tours. These have been set up in a manner that maintains access to the promenade and provides ample shading and outdoor seating for customers. These factors contribute to the Circular Quay being a hotspot for tourists on the waterfront.

Figure 32

The Circular Quay Shopping District
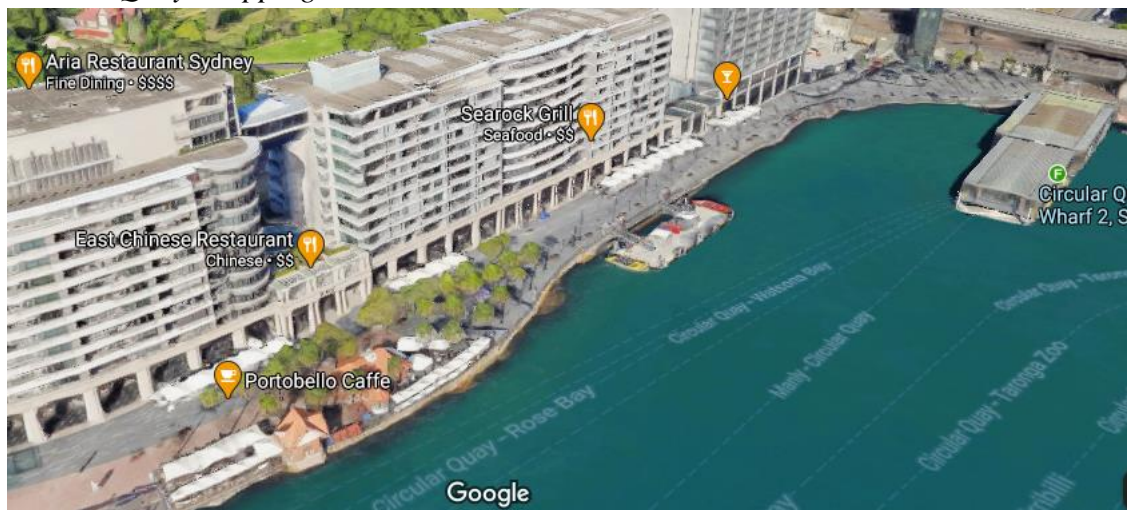
(Google, 2021)

The Circular Quay is a multi-zoned location. The promenade that runs along the water's edge is owned, designed, and maintained by the Sydney branch of the New South Wales government. The shops and restaurants behind it are owned and operated by their individual developers. If any restaurants wish to have outdoor dining that extends onto the promenade, they will have to abide by certain guidelines restricting the design, location, and the size of the outdoor seating (Appendix J).

The promenade itself is designated as RE1 zoning which applies to public open space areas. The intention of this zone is to serve for a wide range of recreational settings while highlighting, and enhancing the natural environment. This is done through maintaining an open view of the water and including trees for shade along the promenade for people to get a sense of being closer to the natural environment of the waterfront. The full zoning designation can be found in Appendix M.

The organization and the layout of the space is instrumental to ensuring good public access. The layout of the Circular Quay is very simple and allows for a lot of use from the waterfront as seen in Figure 33.

Figure 33

Top Down View of the Circular Quay Outlining Different Areas.

(Google, 2021)

This section of the waterfront is split into three different sections. The promenade (red line) is very wide, and provides ample space for walking, sitting on public benches, and enjoying the views provided. There are private developments (yellow) in a strip mall on the far side of the promenade which follows a uniform design, and has large glass windows to maintain that connection to water while shopping. For the restaurants, there are options for outdoor seating (blue) which are shaded, marked off with rope, and are on both sides of the promenade to provide a dining experience closer to the water.

A thorough set of guidelines to ensure that developers design, and maintain their developments in a manner that strives to keep an open and inviting space is key to a waterfront's success. As of 2016, an Environmental Action plan was also added into the guidelines. This plan outlines Sydney's efforts to create an urban forest with trees and greenery throughout the city in order to bring a larger sense of nature into the city. There are also very specific guidelines catered to maintaining an environment welcoming for everyone. Some of these guidelines can be found in Appendices J-L.

These guidelines are upheld in Sydney through a multi-step review process which changes depending on the area of development. Development is a community effort, and all new developments throughout Sydney are reviewed by councils and neighbors before approval. After filling out an application and providing all the necessary plans to the NSW (New South Wales) Government, the NSW Council will review it to ensure that it meets all the necessary guidelines in the area. If they deem the application acceptable, it will move on to the next step where the physical site will be inspected to ensure there are no issues with the land there and the development. During this step, neighbors near the development will also be looped into the review process so they may give their opinions on the development and how it would affect the

area. If the feedback is mostly positive and there are no issues with the site, the development may then be approved.

Sydney is a prime example of a great waterfront city. Through their strict guidelines, thorough review process, and involvement with the community, the NSW Government has created a diverse, open, and environmentally conscious waterfront in Sydney.

4.6 Vancouver Findings

Vancouver is a city with a large maritime presence. This is evident through the large container port that contributes to most of the city's economy. It is the largest container port in Canada, and also the third largest in all of North America and handles over 76 million metric tonnes of the country's total cargo every year (iContainers, 2020). There are also several other industrial ports as well as hundreds of privately owned ships in a large number of marinas (Bayshore West Marina, The Coal Harbour Marina, the Burrard Civic Marina, etc.) around the waterfront. The large maritime presence is also seen in the architecture throughout the city. There are many areas where older, wooden, docks are used near developments in order to maintain an older, more historic maritime atmosphere.

Figure 34
DP World Vancouver Container Terminal
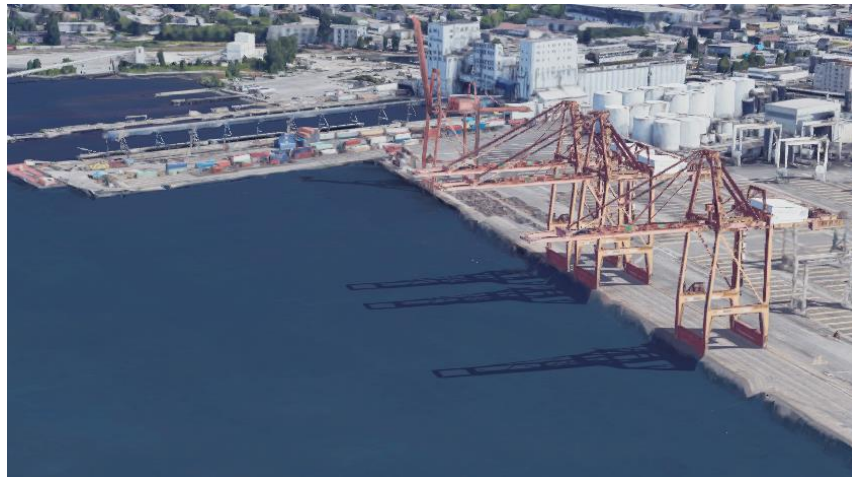
(Google, 2021)

There are several communities that exist along the waterfront and each strives to maintain public access in different ways. Granville Island is one community that strives to "provide a self-sustaining environment that fosters diverse cultural, educational, and commercial enterprises while maintaining the Island's historic industrial character" (Granville Island Leasing Guidelines, 2007, p. 3). Granville Island is known as Vancouver's primary artistic and cultural hub with a rich industrial and maritime heritage and attracts millions of visitors each year (Pop-up Spaces – Granville Island Administration, n.d.). Granville Island is famous for its Public Market and is home to many different retailers, restaurants, cultural venues and theatres. There

are also artistic attractions open to the public, such as the Granville Giants Murals which help to attract tourists to the island year round. The island strives to maintain the old harbour atmosphere of Vancouver as seen through the open marina and a lot of old wooden docking along the island which people can walk through.

As of 1972, the island was administered by the Canada Mortgage and Housing Corporation (CMHC) which maintains the space. The developers in Granville Island lease the land from CMHC and are held to certain guidelines, objectives, and clauses which are outlined in their guideline document in Appendix N. These guidelines helped make Granville Island an open and accessible community. There are ample parking spaces,plenty of space between developments, and a large promenade, all with a very nice layout as pictured in Figure 35.

Figure 35
Top Down View of Granville Island Outlining Different Areas

(Google, 2021)

This section of the waterfront is not very dense, however, it still includes a variety of activities while maintaining an open environment. The promenade (red line) runs along the entire waterfront, and in some areas is part of the dock on the water, providing a much closer connection to the water while adding to the maritime atmosphere of the city. There are private developments (yellow) which include shops that are more densely located on the top of the image, and restaurants spread further apart. This allows people who want to shop to be able to shop in one store and move to the next easily. People who want to eat won't be looking for

another restaurant after a meal, allowing these restaurants to spread out and have more room for outdoor seating and parking. The outdoor seating (blue) is available for the restaurants directly on the water's edge. They are shaded, allow an unobstructed view of the water, and are near stairs that allow people to go down onto the hardwood, dock-like, promenade below.

Granville Island is owned by one main developing company (CMHC) that leases plots to tenants. Therefore, they rely on clauses in these leases to ensure that each tenant reinforces the atmosphere of the community while maintaining an open and inviting space along the water. There are several guiding principles that ensure that tenants maintain an open, inviting space along the waterfront for the public. These guidelines are highlighted here, and are also available in Appendix N.

Vancouver's development approval process compliments the guidelines placed by CMHC. In Vancouver, all future developments must first be approved by the Development Permit Board as well as one or more committees or panels if deemed necessary by the Director of Planning. In Granville Island, CMHC or the Granville Island Business and Community Association will be consulted at this stage, to ensure that the development is not only aligned with the city's goals, but also those of the island. In most cases, surrounding properties, and other neighbors will be notified of the new development and will also be able to give feedback on the proposal. This is instrumental to ensure that there is an overall positive reaction from the surrounding area for the proposal and that it would add to the community instead of being detrimental to it. Finally, based on the feedback, a decision is made and an appeal process will have begun for any failing proposals where they can go back and revise their application for a future submission.

4.7 What a successful waterfront looks like

A successful waterfront is one that the users enjoy and can have various types of interactions with. From the survey conducted with a small population of 148 people, we found that over 70.3% of these visitors to the cities visited their respective waterfront areas, indicating that within our non-random sample the cities' waterfronts were an important part of their city experience.

Figure 36
Survey Results for Whether People Visited a Waterfront Area in One of Our Six Cities

Did you visit any waterfront areas or parks along the water?

No
29.7%

Yes
70.3%
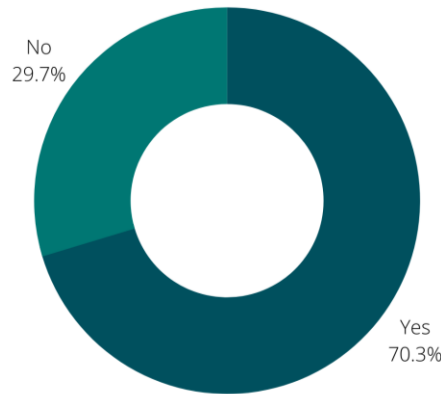
      The quality of the interaction between the waterfront with adjacent commercial developments depends on the visibility, permeability, entrance design, signage, accessibility, and the available outdoor seating. The visibility of the development to the waterfront allows for a visual connection of the two that encourages flow within the place and interaction with the visitors. An indication of this would be shops with a glass panel and roman blinds within them to allow a flexible visual interaction. An example of permeability in a waterfront refers to having a promenade with multiple points of entry to encourage the flow of people in the area. The criteria of entrance designs are characterized by having these multiple points be well-lit and open entries to the establishments on the promenade to enhance user experience. The accessibility criteria refer to the transitions of outdoor to indoor establishments that are free of blockage from the promenade. Accessibility incentivizes shoppers to use promenades and promenade visitors to shop. Lastly, a waterfront with available outdoor seating captures the attention of the users and provides them with a reason to stay longer. From our survey, we established that accessibility was important and that our selected cities displayed this.

Figure 37
Survey Results for Whether the Waterfront was Easily Accessible

It was easy to locate and get to the waterfront.
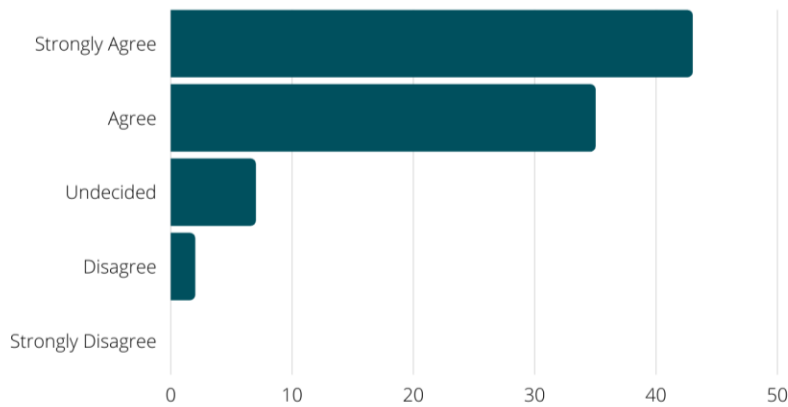
In order to identify successful interactions of the waterfront with transport facilities, the seating areas, shade, amenities, and visibility of the terminals/piers need to be taken into account. Seating areas allow users to rest while walking through the waterfront. This also allows them to enjoy the area and spend more time in it. From our survey, it was also clear that most people within our sample used public transport or accessible walking routes to get to the designated waterfront area.

Figure 38

Survey Results for the Modes of Transportation Used to Reach the Waterfront
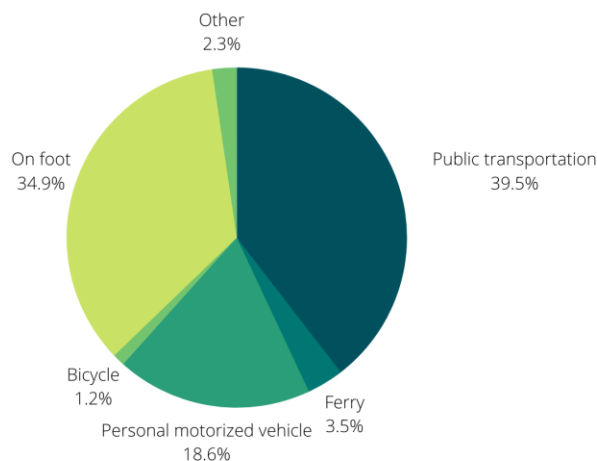
The visibility of the terminals and the pier is an important characteristic because it ensures the waterfront and the transportation areas are visually connected and enables waiting crowds to enjoy the waterfront while keeping track of their ride. Amenities such as entertainment

and food stores or kiosks activate the waterfront by entertaining commuters. This also brings more people to the promenade since the commuters also use the amenities of the waterfront. The survey showed that over 90% of the visitors considered restaurants, shops and other entertainment venues important when visiting the waterfront, although only 42% dined outside and only 35% shopped along the waterfront.

To engage frequent users to enjoy and spend more time at the waterfront, seating, and shade areas are characteristics to consider. Providing places for people to rest with shade gives a space for users to pause and relax in their visit to the waterfront. Having resting areas is essential when incentivizing people to engage with an outdoor public activity. This also entertains the users to spend more time and engage with the waterfront to a further extent. A variety of seating schemes such as lawn areas are encouraged, although this does entail regular maintenance.

While the sample size of our survey was small relative to the number of waterfront users and most of the responses came from tourists and not locals, these results do support our archival research findings. The reason for our small, non-random sample set was due to limitations of conducting a project remotely. In order to create a larger and more accurate data set, the survey should be administered to more people take note of targeted use groups: locals, tourists, and commuters. People do enjoy waterfronts in cities they visit and they interact with private developments like shops or restaurants along the waterfront. Therefore, it is important to incorporate those into waterfront design plans.

5. Our Conclusions

In this chapter we will present the conclusions we have arrived at from our research. We will outline the elements of a successful waterfront, how to achieve a unified waterfront, and how laws and regulations should be issued in order to ensure a waterfront is well-connected and accessible by all.

5.1 Elements of a Successful Waterfronts

We have found several waterfront elements of a waterfront that need to be present in order for it to be successful. These can be broken up into three main components: the environmental focus, having a variety of developments along the waterfront, and a pleasant atmosphere.

5.1.1 Environmental Focus

In order for a waterfront to be successful, the designing process must focus on environmental factors. Specifically, designers should put plans in place that will contribute towards a resilient waterfront that can withstand rising sea levels, erosion, and other effects of climate change. Our research shows that members of waterfront planning committees tend to assess the development's commitment to preserving the surrounding ecology and its ability to withstand future natural waterfront damage. They do so while delegating the city funds because they will not budget for a waterfront that might fall apart in the future. In order for a waterfront to thrive, be accessible, and bring in traffic, it has to withstand deterioration and climate change. After the environmental aspects are considered, the developers should continue with the rest of the waterfront planning.

5.1.2 Variety of Features

There needs to be a variety of developments along the waterfront. Merely having open or green spaces is not enough to attract people. These various developments include entertainment venues, sports fields, amusement attractions, convention centers, shops, restaurants, museums and more. These options and establishments provide a diverse collection of activities waterfront visitors can participate in. They contribute to promoting the city's culture and its atmosphere.

These features benefit both the public and the private sectors. People are able to visit the attractions and spend more time at the waterfront. Visitors will benefit the private developer stakeholders by bringing in cash flow to the local restaurants, shops, and other attractions. In addition, people tend to attract more people. They are naturally interested in areas that other people are also visiting, so the more people who visit, the more business local shops, restaurants and other venues will get and the more attractive that area will be for real estate investment.

It is important to note that these attractions must be well integrated into the waterfront as a whole. Each venue should have a clear view of the water, whether it be through large glass

windows or open entrances, and having seats facing the harbour. They should be easily accessible from both the street and the waterfront promenade.

5.1.3 Waterfront Atmosphere

Generally, people come to a waterfront area because they enjoy its ambiance. People enjoy spending time around others in areas that promote a sense of community and safety. Designing a welcoming space for all is essential to the success of a waterfront.

Incorporating the history of the area where the waterfront is developed is one way to establish a nostalgic mood. Incorporating old and refurbished industrial buildings can bring people back to times when the waterfront served as a port and was an essential component of the city's economy. The waterfront should create a special experience and atmosphere that people are able to immerse themselves into and establish an emotional connection to. This connection is what will keep them coming back.

5.2 Achieving a Unified Waterfront

In order for a waterfront to be successful, there needs to be a comprehensive plan which views the waterfront holistically. The goals of the waterfront should be agreed upon in the initial design process and closely followed throughout the rest of the development. A clear and concise development plan should take into consideration the target audience, their needs, and their preferences for the future of the space.

5.2.1 Population the waterfront is being designed for

We found that it is key for the developing group(s) to have a clear vision of who the waterfront is being designed for and the purpose the area will serve for this audience. The initial purpose of some successful waterfronts studied, was to engage locals surrounding the area. These individuals are of all ages and of different backgrounds, so their diverse input should be sought after. This will result in more local engagement with the designated area. It also lowers the chances of near-by communities getting upset over disruptions in their daily lives, such as noise or large buildings blocking their views. Designs that cater to communities nearby must include: high accessibility, such as multiple entrances to the park and a connection to the city's public transportation, visibility of the water, and an area for the community to congregate and participate in a variety of cultural activities. There should also be encouragement for local businesses in the area as they will drive traffic to the waterfront. These elements appeal to locals because they provide an alternative to the dense urban environment of a city. A way of making sure these needs are met is to include the community surrounding the development in planning the initial steps of development and allow for input and suggestions. This will result in an establishment built for the people and by the people.

Our research also shows that waterfront attractions often appeal to tourists. They often visit areas that have a large variety of activities, such as museums, amusement parks, and large

venues with concerts or sports games. These attractions are lively and exciting. Tourists are also willing to pay more for larger activities in contrast to locals. We credit this to tourists looking for a local experience from the city they are visiting. Whoever the designated population is, whether locals or tourists, there must be a thorough process of identifying their needs and an analysis of the desired outcomes of the experience being provided by the waterfront area.

5.2.2 Multi-Step Review Process

In order to carry out a thorough and complete plan of the waterfront, there must be a specific and detailed review process of the planned design. Aside from the community input, it is important to have personnel knowledgeable in each of the areas mentioned in the previous section and for them to give input for the development. All personnel must act consistently in viewing and designing the waterfront as a whole. This means having a holistic perspective that takes into consideration all parts of the waterfront, not just sections of it. Once the target population and location of the development is determined, the review process must include analysis of:

- The zoning of the area
- The overall layout and design by a group of city planners
- The profile of the community surrounding the area (social and economic characteristics)
- The community's opinions on the development
- The guidelines and laws in place in that area (noise specifications, building regulations, etc.)
- The environmental factors of the area
  - How the development effect these factors and is affected by the climate, and potential emergencies or disasters
- The effect of the development on the capacity of public transportation

A successful waterfront designed for a community should not be a series of detached attractions and spaces, but a concise and well-connected space with different areas that relate to each other. Once the thorough analysis by specialized professionals knowledgeable in each of the subjects is completed, then a second review must be done in order to finalize the overall goal of the establishment in accordance with the findings. It should be a cyclical review rather than a direct line where the more information is found, the more areas there are to explore and the more professionals to consult. It is key and essential for this process to be meticulously done and reviewed by different entities and stakeholders. A diverse review panel is also essential for the conclusions to be well-rounded and well-founded. The more in depth this process is, the more successful the waterfront development will be.

5.3 Maintaining Communication Across Waterfront Entities

In each of the cities we researched, the ownership of the waterfront varied from public land to privately leased or owned land. However, each city was able to create an open environment with a seamless interaction between their public and private entities. The instrumental factor for this was maintaining communication across all waterfront entities. The communication between the public government and the private developers must be clear and the goal for the waterfront must be directly communicated to developers.

5.3.1 The Importance of Guidelines

Communicating these goals from the city to the developers is done through existing regulations and zoning by-laws. These guidelines exist to force developers to create an open space along the waterfront. This is especially important in locations where the government leases land out to private developers, but does not include any clauses in the lease regarding maintaining an open and public waterfront. This has led many profit driven developers to invest in upper class residencies with private yards, as well as high class hotels with private patios along the waterfront, destroying the accessibility of the space. These guidelines must be in place to guarantee that the space along the waterfront will remain public. They must be easy-to-access, legible, and must clearly portray the city's goals using specific and detailed terminology in order to properly display what the waterfront should look like in the future. Specificity is key to limit variation in the interpretation of the guidelines and ensures that there are nor inconsistencies between developments, especially during changes in leadership. Some examples include:

- Requiring open spaces directly along the waterfront to be available for public use.
- Specific designs, dimensions, and locations for outdoor dining.
- Requiring roads, promenades, and other paths to be seamlessly integrated with the rest of the city.
- Specific requirements for the width and design of footpaths.
- Requiring shading for a percentage of public seating along the waterfront.

These guidelines should be specific and reflect the city's intentions of maintaining an open waterfront. The more specific the regulations, the easier it is to ensure that the entire waterfront district will be a cohesive and inviting space.

5.3.2 Upholding the Guidelines

Laws and regulations must be upheld to ensure that they are effective. To ensure that developers align with the goal of the city, the multi-step review process mentioned above is key. This will act as a strict process for the plans to ensure that they follow all of the regulations in place, fit the atmosphere of the waterfront, and will incorporate with the rest of the existing waterfront elements. If a plan were to fail this review process, it would be given back to the

developers along with feedback. When revised the plans can be reevaluated by the review board. Maintaining this rigorous communication between the public and private entities is also essential to creating a cohesive, open, and inviting space along the entire waterfront.

Effective processes include a single group to review designs as multiple review boards across a single waterfront allow for conflicting interest and result in a less cohesive waterfront. In cities with multiple groups controlling the waterfront, inconsistencies about the expectations of each of them grow quickly. There are a host of opportunities for miscommunication between the entities which can lead to issues integrating different waterfront districts together, poor maintenance on the waterfront, and an especially slow development process. A single controlling entity allows the waterfront to share the same goal across its entire length, and limits the opportunities for miscommunication between different groups. Community feedback is also vital in this stage as the guidelines may not always reflect what the intended audience for the waterfront is interested in. Looping the neighbors and the community into the development process allows them to weigh in on future plans and help shape the space into an environment that they will enjoy.

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Appendices:

Appendix A: Semi-Structured Interviews with Members of Waterfront Development

1. Waterfront Development Real Estate Company, NYC
2. Member of City Planning Department, NYC
3. Waterfront Development Organization, NYC
4. Member of City Planning Department, Baltimore
5. Member of City Development Non-Profit, Baltimore
6. Member of Waterfront Development, Sydney
7. Member of Development Non-Profit, Chicago

Questions for non-Hong Kong interviewees in benchmarking cities working in waterfront development

1. Please describe your job responsibilities and the work your organization does.
    a. In your words, what is the goal of your organization?

2. What are the government's regulations surrounding public/private waterfront land development that are currently in place in the city where you work?

    a. Please describe any conflicts or challenges you may have encountered or learned about regarding the development of the waterfront in your city.

3. Please describe how you addressed these conflicts or challenges, or what others did to address them.

4. What does a successful waterfront look like to you?
    a. Please describe a project that met these criteria.
    b. How can more projects like these be developed in the future?

5. Please describe your short-term and long-term plans, if any, for making additional improvements to the waterfront in your city.
    a. What do you believe needs to be done in order for these changes to happen? What regulations or policies may need to be introduced to enable these changes to be implemented?

Appendix B: Semi-Structured Interviews with Private Developers
1. RJ Melman, Chicago
2. Daniel Mitchell, Chicago

Questions for Non-Hong Kong interviewees who have developed private businesses on the waterfront

1. Please describe your job responsibilities and the work your business does.

2. Why did you develop your business on the waterfront instead of in another place?
    a. What are some advantages and disadvantages of running businesses on the waterfront?

3. How does being on the waterfront affect your business?

4. Please describe the current way your business interacts with public areas around it, such as the waterfront.
    a. What are some advantages or disadvantages?
    b. Please describe how COVID-19 has affected these issues
    c. Please describe any conflicts or difficulties you've encountered while running a private business on the public waterfront.
    d. What are the specific regulations regarding public/private waterfront land development that you have had to work with to run your business? Are there any changes to these regulations that you would like to have made to help your business be more successful? If so, what are they?

5. What does a successful waterfront look like to you? What makes it successful?

6. Please describe your short-term and long-term future plans for your business on the waterfront.
    a. What do you believe needs to be done in order for these to happen?

Appendix C: Survey Questions

1. What city did you visit?
2. When did you visit?
3. Did you visit any waterfront areas or parks along the water?
    a. If yes:
        i. Which ones?
        ii. How difficult was it to get there?
            1. What modes of transportation did you take, if any?
        iii. Please describe areas along the waterfront that are your favorite places.
            1. What do you like about them?
            2. What can be improved about them?
        iv. Please describe areas along the waterfront that are your least favorite places.
            1. What do you dislike about them?
            2. What can be improved about them?
        v. Do you visit any businesses along the waterfront?
            1. If yes, what attracts you to them?
            2. If not, why?
        vi. Please describe a successful waterfront.
    b. If no:
        i. Why not?

ii.   Is there anything that could be added to the waterfront which could
encourage you to go?

iii.   Please describe a successful waterfront.

Appendix D: Popular City Spreadsheets

Non-Duplicates	Frequency	>1	>2
Amsterdam	1	Baltimore	Baltimore
Auckland, New Zealand	1	Bangkok	Chicago, USA
Baltimore	3	Chicago, USA	Copenhagen, Denmark
Bangkok	2	Copenhagen, Denmark	Helsinki, Finland
Barcelona, Spain	1	Hamburg, GER	NYC, USA
Bergen, Norway	1	Helsinki, Finland	Rio de Janeiro, Brazil
Berlin	1	Hong Kong	San Francisco, USA
Brighton, England	1	Lisbon, Portugal	San Sebastian, Spain
Cape Town, South Africa	1	Montreal, Canada	Stockholm, Sweden
Chicago, USA	4	New Orleans, USA	Sydney, AUS
Copenhagen, Denmark	3	Nice, France	Vancouver, Canada

City		City		City
Dubai, United Arab Emirates	1	NYC, USA		Venice, Italy
Dublin, Ireland	1	Perth, Australia		
Duesseldorf, GER	1	Porto, Portugal		
Edinburg, Scotland	1	Rio de Janeiro, Brazil		
Hamburg, GER	2	San Francisco, USA		
Helsinki, Finland	3	San Sebastian, Spain		
Hong Kong	3	Singapore		
Honolulu, Hawaii	1	Stockholm, Sweden		
Istanbul, Turkey	1	Sydney, AUS		
Kenosha, WI, USA	1	Tokyo, Japan		
Kuala Lumpur	1	Vancouver, Canada		
Laguna Beach, CA, USA	1	Venice, Italy		
Lisbon, Portugal	2			
Logansport, IN, USA	1			
Los Angeles, USA	1			
Miami, Florida	1			
Montreal, Canada	2			
New Orleans, USA	2			
Nice, France	2			
NYC, USA	3			
Olso, Norway	1			
Paris, France	1			
Perth, Australia	2			
Porto, Portugal	2			
Providence, RI	1			

Rio de Janeiro, Brazil	3		
San Antonio, TX	1		
San Francisco, USA	5		
San Sebastian, Spain	3		
Singapore	2		
Stockholm, Sweden	3		
Sydney, AUS	4		
Tampa	1		
Tokyo, Japan	2		
Toronto	1		
Vancouver, Canada	4		
Venice, Italy	4		

Renewable Energy

The Project design would incorporate new technology to provide renewable energy, such as solar energy, to the extent practicable. Photovoltaic cell installations could provide a significant amount of the energy demand of Brooklyn Bridge Park, so consideration is being given to utilizing photovoltaic cells, and, possibly, hybrid streetlights. Photovoltaic cells could be mounted on the roofs of the remaining pier sheds

Upland Between Pier 5 and 6

An existing building at 360 Furman Street is to be converted from manufacturing use to residential use with ground floor retail and a restaurant uses. The residential portion

would contain up to 500 units and up to two stories could be added to the building's main roof increasing the main roof height from 146 to 169 feet (230 feet to the mechanicals). Parking would be provided for up to 650 spaces.

Upland of Pier 1

A mixed use hotel and residential development is proposed for the Pier 1 upland area on the site of the existing Cold Storage Warehouse buildings. The site would accommodate a mix of development, including restaurant, residential and hotel. The hotel would include meeting rooms, spa and café/restaurant uses. The residential and hotel uses would be located in two buildings, one of approximately 55 feet and one of approximately 100 feet in height. The hotel/residential complex could include up to 300 parking spaces. The restaurant/café uses would be approximately 17,500 square feet. The residential use could range between 150 and 180 units and the hotel could range between 170 and 225 rooms. The number of hotel rooms would decrease as the number of residential units increased and vice versa. However, the maximum limit for the site is a combination of 225 hotel rooms and 150 residential units or 170 hotel rooms and 180 residential units.

Safe Water" Zones and Water--Dependent Uses

From the southern edge of Pier 4 to the southern edge of Pier 1 two connected "safe water zones" are planned. These would provide approximately 12 acres of secure water area for non-motorized boats, including kayaks, canoes, and paddle boats. Marine structures would define the area, serving to attenuate waves from passing boats. Floating boardwalks would be arranged to contain the boaters and kayakers and provide additional wave attenuation within the safe water area. A

channel or "canal" would connect the two safe water zones, between Piers 3 and 4 and between Piers 1 and 2. This canal would allow kayaks or other small non-motorized craft to navigate from the area between Piers 1 and 2 to the area south of Pier 3. Kayak launching areas would be provided. Piers 2 and 3 would be connected across the canal to the upland areas of the Project by overhead

pedestrian walkways that would also provide access for emergency vehicles. The

remnants of Pier 4 would be left in place and used as a nature preserve. At Pier 1, some timber piles would be left in place following removal of the pier deck to preserve a physical record of the site's industrial past. Outside the safe water zones, the area between Piers 5 and 6 would provide slips for the mooring of historic or educational vessels. Between Piers 5 and 4 would be a marina for sailboats and powerboats. The marina would provide limited boating services, including utility hook-ups and fueling. Water taxi stops would be located at Pier 6, at the slip between Piers 2 and 3, at the north side of Pier 1, and near the John Street site, allowing waterborne transportation options for Project users and others coming to the Project site.

Vehicular Access and Parking

In the cold weather months, park users would be permitted to drive onto and park at Pier 5, Which would allow field sports teams and their supporters to reach the playing fields directly by vehicle and provide for drop-offs and pick-ups.

PROJECT DEVELOPMENT

Brooklyn Bridge Park operates under a mandate to be financially self-sustaining. This mandate was memorialized in the Park's General Project Plan approved in 2005. While a small fraction of the required operations and maintenance funds for the park will be collected from permits and concessions, the majority of the funds will come from a limited number of revenue-generating development sites within the project's footprint. The development program was determined after an in-depth analysis of potential locations. The analysis focused on finding uses that would generate sufficient revenue to support park operations, minimize the size of the required development footprint, and be compatible with the surrounding park and neighborhood uses. Development locations were chosen to take advantage of the existing urban context by concentrating development closest to existing park entrances and maintain the protected view corridor from the Brooklyn Heights Promenade, and thus create vital, active urban junctions at each of the park's three main entrances.

The approved development program includes the sites and uses outlined below:

Pier 6 Sites — One Brooklyn Bridge Park (completed 2008) — Pier 1 Sites — Empire Stores — John Street Site

NE BROOKLYN BRIDGE PARK

One Brooklyn Bridge Park (OBBP) is a residential condominium building. Completed in 2008, this building is a converted 1,000,000+ square foot warehouse building located along Furman Street just south of Joralemon Street. The building includes over 440 residential units, approximately 80,000 square feet of ground floor retail, and over 500 parking spaces.

PIER 1

Located at the Old Fulton Street entrance to the Park, the Pier 1 development site includes two parcels. The larger parcel to the north is approximately 65,000 square feet, and the smaller parcel is approximately 35,000 square feet. In 2012, BBP selected a joint venture of Starwood Capital and Toll Brothers City Living to develop the Pier 1 sites. Their proposed development will include a 200-room Starwood hotel, approximately 100 residential units, 16,000 square feet of restaurant space, 2,000 square feet of retail space, a 6,000 square-foot fitness center, and 300 parking spaces. Construction began in spring 2013 and opened 2017.

EMPIRE STORES

The Empire Stores are a complex of seven contiguous four- and five-story historic warehouses containing of approximately 350,000 square feet. The warehouses were built between 1869 and 1885 and primarily used for coffee storage until they were abandoned in the 1960s. The warehouses have been closed for over 50 years due to deteriorated buildings conditions. Redevelopment will adaptively reuse the structure and allow for a mix of commercial, retail and office uses that complement the unique character of this industrial waterfront structure.In summer 2013, a team led by Midtown Equities was designated to redevelop Empire Stores. Designed by Studio V Architecture, the proposed building plan will feature nearly 80,000 square feet of restaurant, retail, and event space and 300,000 square feet of office space. West Elm will anchor the building by leasing both office and retail space. In addition, Brooklyn Historical Society will occupy 3,200 square feet of exhibition space as part of the project to celebrate the rich cultural history of the borough. Construction began in early 2014 and is expected to be completed in June 2016.

JOHN STREET

The John Street development site is located at the Park's northern edge in the future John Street section of the Park. In July 2013, BBP selected a joint venture of Alloy Development and Monadnock Development to design and develop the John Street development site. The residential development will include approximately 50 residential units comprising a total of 96,000 square feet, 2,600 square feet of ground floor retail, and 1,750 square feet of cultural space. The cultural space will be occupied by the first annex of the Brooklyn Children's Museum, based in Crown Heights, Brooklyn that provides exhibitions, cultural and environmental educational programming for children and families. Construction began in summer 2014 and is expected to be completed by mid-2016.

PIER 6

Located at Atlantic Avenue, the main southern entrance to the park, the Pier 6 development site comprises two parcels, each roughly 10,000 square feet in area. On June 7, 2016, the BBP Board of Directors voted to approve a joint venture of RAL Development Services and Oliver's Realty Group to develop two residential buildings at the site. The last of the Park's five development

sites approved in the 2005 GPP, the Pier 6 development will ensure the long-term financial stability of Brooklyn Bridge Park, provide desperately needed affordable housing and create hundreds of union jobs. Streetscape upgrades will enhance the Park experience and create a welcoming gateway.

John Street site description

- Located Located on vacant lot just lot just east of Manhattan Manhattan Bridge
- Site is 130' by 74' with a footprint of 9,600 sq. ft.
- Development controls:
- Up to 130 residential units comprising 101,000 sq. ft. of residential space
- Ground floor retail and up to 110 parking spaces
- Maximum height of 130 ft

Uses at the Basement, 1st and 2nd Storey Levels

To create vibrant precincts, attractive and pedestrian-friendly streets, activity-generating uses (AGU), such as retail, food & beverage, and other active uses are to be provided at the following locations:

- The 1st storey of developments fronting key streets, pedestrian malls, through block links, and public spaces;
- Alongside the underground pedestrian links (UPLs) at the basement levels of the developments; and
- Alongside the elevated pedestrian links (EPLs) at the 2nd storey of the developments.

For more information on AGUs, please refer to the Development Control Handbook.

Outdoor Refreshment Areas

Outdoor Refreshment Areas (ORA) can be allowed within the public areas or open spaces within development sites. If provided, the Gross Floor Area (GFA) for the ORAs are to be computed as part of the maximum permissible GFA for the development, unless otherwise permitted under prevailing bonus GFA schemes. The ORAs will be subject to the prevailing Development Control Guidelines issued by the Competent Authority under the Planning Act. Developers are encouraged to incorporate spaces for ORAs at the design stage. The ORAs are to be clearly defined to prevent encroachment onto the adjacent pedestrian thoroughfares – e.g. through the use of planters or other physical markers, etc.

Public Space

It is important to provide public spaces within private developments for users to enjoy. Selected developments are required to provide public space(s) within the development site. These may be well landscaped open spaces, or covered public spaces that provide a high degree of visual and physical porosity through the building. Public spaces are to be publicly accessible at all times. They are to be connected to the key pedestrian routes at the 1st storey (such as open and covered walkways, through block links), and, where applicable, are encouraged to be linked and designed to be well integrated and easily accessible from the underground and elevated 2nd storey pedestrian networks within the development. The design of these public spaces shall comply with the Design Guidelines for Privately Owned Public Spaces (POPS).

Pedestrian Network

The Downtown Core Planning Area is planned as a pedestrian-friendly area with a comprehensive pedestrian network at the 1st storey, basement and 2nd storey levels. This network provides convenient, comfortable, and seamless connections between developments, transport facilities, and key spaces and attractions, and ensures all-weather comfort for pedestrians.

Covered Walkways

All developments are required to provide covered walkways at the 1st storey along the site boundaries or the designated building setback lines. The covered walkways function as public amenities. They are to be kept free of obstruction at all times. In exchange, the area is exempt from GFA computation.

The minimum widths of the covered walkways are either 3.0m, 3.6m or 5.0m, depending on the category of road they front onto. Where colonnades are provided, the internal clear widths of the covered walkways are to be 2.4m, 3.0m and 4.4m respectively. To provide adequate protection for pedestrians during inclement weather, the external soffit heights are to minimally match the width of the covered walkway.

To achieve a distinct character within the Civic District, the covered and open walkways along identified streets shown in Appendix 7 are to be paved in predominantly 600mm x 600mm flamed finish heavy duty Rossa Porrino (or equivalent) granite tiles, set out perpendicular to the lines of Road Reserve. The remaining walkways are to be paved in predominantly 600mm x 600mm flamed finish heavy duty grey-green granite tiles, set out perpendicular to the lines of Road Reserve.

To maintain the district character within the Downtown Core, covered walkways and open walkways in areas outside the Civic District are to be predominantly paved in 600mm x 600mm flamed finish heavy duty grey-green granite tiles, set out perpendicular to the lines of Road Reserve.

The detailed design, paving pattern and a sample of the paving material are to be submitted for evaluation and approval at the Provisional Permission (PP) stage.

Through Block Links and View Corridors

Selected developments are required to provide through block links and/or view corridors to improve the physical and visual permeability of the street block.

Through block links complement the at-grade pedestrian network by allowing pedestrian circulation through long street blocks. View corridors also safeguard key views through the development.

Through block links are required to have a minimum clear width of 4.0 to 7.0m and a minimum clear height of 10.0m, unless otherwise specified.

The covered walkways, linkways, through block links may be exempted from GFA computation if they form part of the larger pedestrian network and comply with specific urban design requirements, if any.

Underground Pedestrian Link

The Underground Pedestrian Network (UPN) complements the 1st storey pedestrian network and provides direct connection to Rapid Transit System (RTS) Stations. The UPLs are to be at least 6.0m wide (with AGUs on one side) or 7.0m (with AGUs on both sides) with a minimum 4.0m (clear) internal ceiling height, unless otherwise specified.

UPLs are to include vertical pedestrian circulation points within the building envelope to connect to the covered walkway at the 1st storey. Each vertical circulation point is to include a pair of two-way escalators, staircases and two passenger lifts.

The entire UPL and the associated vertical circulation points are to be kept open for public access during the opening hours of the RTS.

Elevated Pedestrian Links (EPL)

EPLs are planned in high density areas with high foot traffic to complement the at-grade pedestrian network and to provide seamless connectivity between developments. The network comprises walkways along the 2nd storey of developments and lightweight link-bridges that span public roads between the 2nd storey walkways. The minimum width of EPLs is 4.0m, unless otherwise specified.

EPLs are to include vertical pedestrian circulation points (comprising a pair of two-way escalators and two passenger lifts) within the building envelope to link to the covered walkways at the 1st storey. The entire EPL and the associated vertical circulation points are to remain open for public use at all times.

Appendix J: City of Sydney Outdoor Dining Guidelines

The primary function of a public footway is to provide access to pedestrians and other users traveling along the street. In some places, the footpath may be too narrow or too busy to support a business use and also provide the clear path of travel required by these guidelines. In these circumstances, the footway is not suitable for outdoor dining. Council will maintain a map, available through Council's website, of busy streets which are not
suitable for outdoor dining.

<u>Clear path of travel</u>

Council will ensure that the public footway continues to provide safe, dignified and equitable access to pedestrians and other users travelling along the street. To achieve this, the Council will ensure a minimum clear path of travel is maintained to a suitable width before any business uses are considered.

<u>Provisions</u>

3.1. A clear path of travel is to be maintained on all public footways before other uses are considered.

3.2. The minimum width of the clear path of travel needs to be:
– 2 meters for streets;
– 1.2 meters for Central Sydney laneways, as shown in Figure 3; and
– 4 meters in shared zones used by vehicles.

3.3. In areas of high pedestrian volume or where closeness to traffic might pose a safety risk, Council may:
– require a greater clear path than shown in 3.2;
or
– not allow outdoor dining, where the street has been identified as not suitable.

3.3.A If an application is lodged and the outdoor dining will operate within the period of 30 October 2020 to 31 October 2021, Council may reduce the width of the clear path of travel provided there is a consistent and predictable clear path of travel for all users and the Australian Standards are met.

3.4. Council can require a clearance of less than 2m where:
– it can be shown that pedestrian safety will not be compromised; and
– where activity such as outdoor dining is desirable.

3.5. The location of the clear path of travel is to be consistent and predictable for each street block.
– A consistent clear path is located on the same part of the footway for the length of the block.
– A predictable clear path is one where the location can be anticipated by users based on either local knowledge of the street or environmental cues.

Figure 3 – Central Sydney laneways

Appendix K: City of Sydney Alternative Ventilation Guidelines

In noisy or hostile environments the Apartment
Design Guide states that the impacts of external noise and pollution are minimized through the careful siting and layout of buildings. In a limited number of situations this may not be possible. In these limited situations the performance pathway described in this guideline should be used to confirm the adequacy of natural ventilation proposals in apartment buildings that do not meet the prescriptive requirements of the Apartment Design Guide (ADG) Objective 4B-1, which requires an 'effective openable area consistent with 5% of the floor area served be provided to each habitable room. The aim of this performance pathway is to provide greater clarity to applicants on the minimum levels of natural ventilation that are acceptable in residential developments.

01 Performance pathway purpose and application

The performance pathway is expected to be applied only where there is genuine physical or environmental constraint on the design of an apartment's natural ventilation. An example would be where acoustic requirements dictate attenuation of traffic noise, which requires air inlets, other than windows and doors, to provide natural ventilation whilst controlling noise.

02 How the performance pathway works

The performance pathway allows constrained natural ventilation openings to be sized to provide a minimum level of ventilation (the 'minimum performance requirements') resulting in acceptable amenity to the occupants. This will allow applications to deliver smaller opening sizes than required by the prescriptive design guidance of the ADG. The performance pathway also requires that additional ventilation openings are provided ('purge ventilation requirements') for the users to increase ventilation beyond the minimum when pollutant loads in the apartment may be elevated. Examples include, redecorating of the apartment or following extended periods of non-occupation. The provisions made for purge ventilation do not need to meet acoustic requirements as they are not relied upon in normal circumstances.

03 Minimum performance requirements

The natural ventilation system for each apartment must provide an average hourly volume flow rate equivalent to the greater of the following criteria:

    1. 10 litres/second/person (where the number of persons is equal to the number of bedrooms in the apartment

    or

    2. 0.3 litres/second/m2 of floor area of the apartment for:

        a. 85% of all hours in the year for cross-through and cross-over apartments,

        or

b. 90% of all hours in the year for all other apartments.

For the purposes of the above, the definitions of crossthrough and cross-over apartments are consistent with the ADG definitions and are limited to those where the total area proposed for natural ventilation is evenly distributed across at least two opposite facades with differences in orientation of 180° ± 35°.

Each habitable room must be provided with effective natural ventilation and its distribution between different rooms must be proportional to reasonable expectations of use and occupation. For cross ventilated apartments the arrangement must promote air movement. In other situations the litres/second/m2 flow rate criteria above should be used as a guide for the requirement for each room.Refer to Table 1 for examples of applying minimum performance requirements.

Table 1: Example of application of minimum performance requirements

Number of bedrooms	'Threshold Apartment Area' (m²) *	Criteria 1 (use when apartment area is less than theshold area)		Criteria 2 (use when apartment area is more than or equal to the theshold area)
		Num. occupants	Performance requirement Air Flow (l/s)	Performance requirement Air Flow (l/s)
1	67	2	20	Apartment area x 0.3
2	100	3	30	Apartment area x 0.3
3	133	4	40	Apartment area x 0.3

* the 'Threshold Apartment Area' is advisory only

Appendix L: City of Sydney Access Policy

Objective 3

Ensure access throughout the pedestrian network in the City, including
footpaths, through-site links, public arcades, overpasses and underpasses.
Strategies

> Council shall provide a continuous accessible path of travel throughout the
City footpath network having regard to the provisions of AS 1428.1, AS
1428.2 and Council Policy.
> Council shall provide kerb ramps from the footpath to the road at all
intersections and through all traffic islands, except where circumstances
warrant otherwise.
> Council shall require that footpaths be at grade on all sites which include a
vehicle crossing.
> Council shall require that construction activity on, over or adjacent to the
public way provide a pathway free of obstruction or projections and that it
be complete with ramps, direction and warning signs, fencing and handrails
all in accordance with AS 1428.1.
> Council shall provide simple standardised signage and tactile signage at all
signalled intersections to assist with street identification and such signage
shall have regard to the provisions of As 1428.1, AS 1428.2 and Council
Policy.
> Council shall ensure that street furniture is designed and located having
regard to the provisions of AS 1428.2.
> Council shall ensure that all replacement ground surfaces throughout the
pedestrian network under Council's control are slip resistant, traversable
by wheelchairs and indicate changes of grade by the use of materials which
provide a visual and tactile differentiation unless the circumstances warrant
Otherwise.
> Council shall investigate other pedestrian access matters as required
including new paving materials, wheelchair detector loops, speed bumps,
removal of obstructions, etc., in order to improve the pedestrian network.
> Council shall promote improved access to those pedestrian areas not under
its control by consulting with the relevant parties and requesting their
cooperation in complying with the Access Policy

Objective 4

Provide convenient access to all public open space including parks, reserves,

malls, plazas and squares.

<u>Strategies</u>

> Council shall provide access to and within all proposed public open space having regard to the provisions of AS 1428.1, AS 1428.2 and Council Policy.

> Council shall endeavour to improve the accessibility of all existing public open space which has inadequate access, addressing matters such as signage, ramps, paving, parking and toilet facilities and having regard to the provisions of AS 1428.1, AS 1428.2 and Council Policy.

> Council shall promote improved access to open space not under its control by consulting with the relevant parties and requesting their cooperation in complying with the Access Policy.

<u>Objective 5</u>

Raise awareness and understanding of disability issues through research, information, consultation and education programmes involving the community, professionals, Council members and Council staff.

<u>Strategies</u>

> Council shall recognise the City of Sydney Access Committee as the main advisory body to Council on access issues.

> Council shall maintain an Access Map which provides information on accessible building entrances and open space, ramps, toilets, telephones, parking, footpath grades, taxi stands, etc., in the Central Business District. The Access Map shall be one of a series of standard city maps maintained by the Council.

> Council shall distribute the Access Policy, the Access Checklist and the Access Map in conjunction with other Council information, and relevant Council brochures shall refer to the Access documents.

> Council shall provide staff training programmes which outline the requirements for access and raise awareness and understanding of the needs of people with disabilities.

> Council shall investigate more general matters of access as required.

> Council shall review the Access Policy every three years.

Appendix M: Sutherland Shire Council RE1 Zoning

RE1 Public Recreation
This is a zone which applies to public open space areas and land used for recreational activities. The intention of the zone is to provide a range of recreational settings and compatible land uses while protecting and enhancing the natural environment for recreational purposes.
RE1 zone uses
- The following uses can be carried out with consent in the RE1 Public Recreation zone:
- Community facilities
- Environmental facilities
- Food and drink premises
- Information and education facilities
- Kiosks
- Passenger transport facilities
- Recreation areas
- Recreation facilities (indoor)
- Recreation facilities (outdoor)
- Roads

Environmental protection works can also be carried out without development consent.
All other uses that are not listed above are prohibited in the zone unless they are specifically permissible under State Environmental Planning Policies.

Appendix N: CMHC Leasing Guidelines

About Granville Island

Granville Island is a revitalized urban waterfront neighborhood respectful of its heritage, committed to excellence, and serving the Vancouver community. The mix of cultural, artisan, recreational, industrial, maritime, retail and market communities invigorates and enriches Granville Island, resulting in accolades such as the New York-based organization Project for Public Spaces "best neighborhood in North America" (2004).

Granville Island is home to 275 businesses and facilities, employing more than 2500 people and generating in excess of $130 million in economic activity annually. It is one of the most popular visitor destinations in Vancouver.

Granville Island Mission

Granville Island's mission, as stated in the Granville Island Development Plan (1995), is to provide a self-sustaining environment that fosters diverse cultural, educational, and commercial enterprises while maintaining the Island's historic industrial character.

Management Structure

In 1972, on behalf of the Government of Canada, the administration of Granville Island was transferred to Canada Mortgage and Housing Corporation (CMHC).

The Granville Island Trust is an advisory body composed of nine members, with representation from Granville Island, local area residents, and the City of Vancouver.

Guiding Principles

- CMHC-Granville Island Strives to:
- Ensure financial sustainability;
- Retain and enhance the Granville Island experience;
- Maintain an accessible destination for all people;
- Preserve and build on the historic character of Granville Island;
- Encourage alternative forms of access;
- Provide for a variety of business and cultural opportunities on Granville Island;
- Ensure barrier-free access;
- Promote safety and security;
- Support sustainable development initiatives - economic, social, and environmental; and,
- Take an incremental approach to change.

Where an area is zoned CD-1 (Comprehensive Development) District and Council has approved the form of development, the Development Permit Board may approve the issuance of permits for the uses listed in the by-law designating the district, subject to such conditions as it may decide, provided, however:

(a) the development is consistent with the intent and purpose of this by-law and any applicable official development plan; and

(b) legal instruments are provided, where necessary, to ensure that all features related to each individual development are used, operated, and maintained in accordance with the development as approved.

Appendix P: Links to Documents on Six Cities

City	Entity	Document	Link
New York City	Brooklyn Bridge Park Corporation	Board Operations and Policies	https://www.brooklynbridgepark.org/about/about-brooklyn-bridge-park-corporation/board-operations-and-policies/
New York City	Brooklyn Bridge Park Corporation	Brooklyn Bridge Park History	https://www.brooklynbridgepark.org/about/history/
New York City	Brooklyn Bridge Park Corporation	Noise Guidelines	https://www.brooklynbridgepark.org/wp-content/uploads/2020/10/FEIS_Chapter-17.-Noise.pdf
New York City	Brooklyn Bridge Park Corporation	Policy on Acquisition and Disposition of Real Property	https://www.brooklynbridgepark.org/wp-content/uploads/2020/10/Policy-on-Acquisition-and-Disposition-of-Real-Property.pdf
New York City	Brooklyn Bridge Park Corporation	General Project Plan	https://www.brooklynbridgepark.org/wp-content/uploads/2020/10/2006-General-Project-Plan.pdf
New York City	Brooklyn Bridge Park Corporation	Chapter 1: Project Description	https://www.brooklynbridgepark.org/wp-content/uploads/2020/10/FEIS_Chapter-1.-Project-Description.pdf

New York City	Brooklyn Bridge Park Corporation	Project Development	https://www.brooklynbridgepark.org/about/about-brooklyn-bridge-park-corporation/project-development/
New York City	Brooklyn Bridge Park Corporation	Design and Phasing Presentation	https://www.brooklynbridgepark.org/wp-content/uploads/2020/10/Design-and-Phasing-Presentation.pdf
New York City	Brooklyn Bridge Park Corporation	Land Use, Zoning, and Public Policy	https://www.brooklynbridgepark.org/wp-content/uploads/2020/10/FEIS_Chapter-2.-Land-Use-Zoning-and-Public-Policy.pdf
New York City	Brooklyn Bridge Park Corporation	Final Environmental Impact Statement	https://www.brooklynbridgepark.org/about/final-environmental-impact-statement-feis/
New York City	Brooklyn Bridge Park Corporation	John Street RFP Responses Design Presentation	https://www.brooklynbridgepark.org/wp-content/uploads/2020/10/John-Street-Design-Presentation-to-Community-Advisory-Council.pdf
Singapore	URA	Downtown Core Design Guidelines & Plans	https://www.ura.gov.sg/Corporate/Guidelines/Urban-Design/Downtown-Core

Singapore	URA	Developers' Guidelines	https://www.ura.gov.sg/Corporate/Guidelines/Developers
Singapore	URA	Guidelines for Outdoor Refreshment Areas	https://www.ura.gov.sg/Corporate/Guidelines/Urban-Design/Downtown-Core
Singapore	URA	Design Guidelines and Good Practice Guide for Privately Owned Public Spaces (POPS)	https://www.ura.gov.sg/Corporate/Guidelines/Circulars/dc17-02
Singapore	URA	Food Truck Application	https://www.ura.gov.sg/Corporate/Get-Involved/Shape-A-Distinctive-City/Explore-Our-City/Marina-Bay/Food-Trucks-Application
Sydney	City of Sydney	Development applications	https://www.cityofsydney.nsw.gov.au/development-applications/how-to-prepare-your-development-application
Sydney	Sutherland Shire Council	Zones (RE1)	https://www.sutherlandshire.nsw.gov.au/Development/Local-Environmental-Plan-LEP/Local-Environmental-Plan-2015-LEP-2015/Zones/Recreation-Zones/RE1-Public-Recreation

Sydney	NSW Dept. of planning	Development applications	https://www.planning.nsw.gov.au/Assess-and-Regulate/Development-Assessment/Your-guide-to-the-DA-process
Sydney	City of Sydney	Development guidelines & Policies	https://www.cityofsydney.nsw.gov.au/development-guidelines-policies
Chicago	DEPARTMENT OF PLANNING AND DEVELOPMENT CITY OF CHICAGO	Compiled documents concerning requests for design of Navy Pier	https://gisapps.chicago.gov/gisimages/zoning_pds/PD527.pdf
Chicago	City of Chicago, Department of Planning and Development	Plan Commission Rules	https://www.chicago.gov/content/dam/city/depts/dol/rulesandregs/DPDPlanCommissionRulesFINAL.pdf
Chicago	Chicago Department of Zoning and Planning and Chicago Department of Transportation	Chicago Riverwalk Main Branch Framework Plan	https://www.chicago.gov/content/dam/city/depts/zlup/Sustainable_Development/Publications/Chicago_River_Main_Branch_Framework_Plan/mainbranchframeworkplan.pdf
Chicago	City of Chicago, Department of Planning and Development	Chicago River Design Guidelines	https://www.chicago.gov/content/dam/city/depts/zlup/Planning_and_Policy/Publications/Chicago_River_Design_Guidelines/chicago_river_design_guidelines_2019.pdf

Baltimore	Department of Recreation and Parks Baltimore City	Inner Harbor Areas and Guidelines for Demonstrations	https://bcrp.baltimorecity.gov/sites/default/files/Inner%20Harbor%20Areas%20and%20Guidelines%20for%20Demonstrations.pdf
Baltimore	Department of Planning Baltimore City	Baltimore Inner Harbor Master Plan	https://planning.baltimorecity.gov/sites/default/files/Inner%20Harbor_Final%20Report_11112013red.pdf
Baltimore	Waterfront Partnership of Baltimore, Maryland Economic Development Corporation, Maryland Department of Business and Economic Development	Baltimore Inner Harbor Economic Impact, Importance, and Opportunities for Investment	http://baltimorewaterfront.com/wp-content/uploads/2015/06/Economic-Impact-Study.pdf
Baltimore	City of Baltimore	Easement Document of City of Baltimore with Ritz-Carlton Residences	https://planning.baltimorecity.gov/sites/default/files/Ritz%20Carlton%20-%20801%20Key%20Highway.pdf
Baltimore	Waterfront Partnership of Baltimore	FY2017 Annual Report	https://www.waterfrontpartnership.org/wp-content/uploads/2017/12/wp_ar2017_v5FINAL_WEBlr.pdf
Baltimore	Department of Planning Baltimore City	Development Guidebook, Requirements for Building in Baltimore City	https://planning.baltimorecity.gov/sites/default/files/RDevelopmentGuidebook.pdf

Vancouver	CMHC	Leasing guidelines for Granville Island	https://giadmin.agentic.ca/wp-content/uploads/2019/12/07_leasing_guidelines_web.pdf
Vancouver	City of Vancouver	Zoning guidelines (CD1 zoning)	https://bylaws.vancouver.ca/zoning/cd-1.pdf