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The Transnational Circulation of Skyscrapers Designed by Kohn Pedersen Fox Associates

**Comparing supertall buildings and large-scale urban developments in
New York, Hong Kong, and Shanghai**

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TABLE OF CONTENTS

ABSTRACT IN ITALIAN	5
ABSTRACT IN ENGLISH.....	7
CHAPTER ONE: COMPETING CITIES	8
1.1 COMPETING GLOBAL AND FIRST-TIER CITIES	8
1.2 CITY BRANDING AND CITY IMAGE	8
1.3 ICONIC ARCHITECTURE AND URBAN MEGA-PROJECTS.....	9
1.4 EXAMPLES OF UMPs AND ICONIC ARCHITECTURE.....	12
1.4.1 The urban regeneration of Bilbao	12
1.4.2 Kuala Lumpur City Center and Petronas Twin Towers.....	15
CHAPTER TWO: GLOBAL CIRCULATION OF URBAN SPECTACLES	17
2.1 URBAN SPECTACLES.....	17
2.2 SUPERTALL SKYSCRAPERS AND THEIR TRANSNATIONAL TRAJECTORIES.....	18
2.3 MULTINATIONAL DESIGN FIRMS' STRATEGIES IN CONTEMPORARY CITIES	20
CHAPTER THREE: RESEARCH QUESTIONS AND METHODOLOGY	22
3.1 OBJECTIVES AND RESEARCH QUESTIONS	22
3.2 METHOD AND COLLECTION OF DATA	23
3.3 CASE STUDY SELECTION.....	23
3.4 ANALYSIS TEMPLATE	24
3.4.1 Location	24
3.4.2 Historical background	25
3.4.3 Masterplan and urban development process.....	25
3.4.4 Iconic architecture.....	26
3.4.5 The implementation process.....	26
3.4.6 The incorporation of iconic architecture into the masterplan	26
3.4.7 Urban effects of the iconic building.....	26
3.4.8 Visual effects.....	27
CHAPTER FOUR: CASE STUDY---THREE SKYSCRAPERS DESIGNED BY KPF	28
4.1 KOHN PEDERSEN FOX ASSOCIATES (KPF).....	28
4.1.1 The firm's networks and trajectories	28
4.1.2 Supertall skyscrapers designed by KPF in the world.....	31

4.2 ONE VANDERBILT AND MIDTOWN EAST NEW REZONING PLAN, NEW YORK	35
4.2.1 Location	36
4.2.2 Historical background	38
4.2.3 Masterplan and urban development process.....	42
4.2.4 Iconic architecture ---- One Vanderbilt	45
4.2.5 The implementation process	45
4.2.6 The incorporation of the iconic building into the masterplan.....	47
4.2.7 Urban effects of the iconic building	48
4.2.8 Visual effects.....	50
4.3 INTERNATIONAL COMMERCE CENTRE AND WEST KOWLOON DISTRICT, HONG KONG	52
4.3.1 Location	53
4.3.2 Historical background	55
4.3.3 Masterplan and urban development process.....	59
4.3.4 Iconic architecture ---- International Commerce Centre	65
4.3.5 The implementation process	66
4.3.6 The incorporation of iconic architecture into the masterplan	69
4.3.7 Urban effects of the iconic building	70
4.3.8 Visual effects.....	71
4.4 SHANGHAI WORLD FINANCE CENTER AND LUJIAZUI FINANCIAL CENTRAL DISTRICT, SHANGHAI.....	73
4.4.1 Location	74
4.4.2 Historical background	76
4.4.3 Masterplan and urban development process.....	77
4.4.4 Iconic architecture ---- Shanghai World Financial Center	81
4.4.5 The implementation process	81
4.4.6 The incorporation of iconic architecture into the masterplan	83
4.4.7 Urban effects of the iconic building	85
4.4.8 Visual effects.....	86
CHAPTER FIVE: COMPARISON.....	88
5.1 Location	88
5.2 Historical background	89
5.3 Masterplan and urban development process.....	90
5.4 Iconic architecture.....	93
5.5 The implementation process.....	94

5.6 Urban and visual effects of the iconic buildings.....	96
CHAPTER SIX: CONCLUSION	100
6.1 THE ROLE OF THE ICONIC BUILDING IN THE MASTERPLAN.....	100
6.2 CIRCULATION OF ARCHITECTURE AND DESIGN STRATEGIES.....	101
6.3 RESEARCH LIMITS AND SUGGESTIONS	103
REFERENCES	105

ABSTRACT IN ITALIAN

In tutto il mondo, gli edifici iconici, soprattutto quelli progettati da studi di architettura internazionali, sono utilizzati per migliorare la reputazione e l'immagine delle città e persino per generare nuove opportunità di sviluppo. Questa tesi si concentra sugli edifici iconici ed esamina il loro ruolo nel placemaking, il loro impatto sull'ambiente urbano, il loro effetto sullo skyline della città e, in particolare, il ruolo dell'edificio iconico nella trasformazione urbana su larga scala. Esamina come i progetti e le strategie incorporino l'architettura iconica. Questo lavoro indaga su come i più rinomati studi professionali di architettura operano nell'arena internazionale, discutendo i progetti di uno stesso studio multinazionale in diverse regioni, confrontando i loro edifici e contesti urbani e riassumendo le somiglianze e le differenze, le sfide e le strategie di progettazione in diversi contesti politici, culturali e storici. Lo studio di architettura Kohn Pedersen Fox Associates (KPF) è stato scelto per una serie di motivi. KPF ha influenzato gli skyline e ridefinito le città a livello globale negli ultimi quarant'anni, progettando numerosi edifici iconici nelle principali città, in particolare in Europa, Nord America e Asia. Questa tesi propone innanzitutto con uno studio introduttivo delle traiettorie transnazionali di KPF in Europa, Nord America e Asia, seguito da una raccolta di esempi che forniscono una comprensione più ampia delle modalità operative di KPF. In seguito, sono approfonditi tre progetti: One Vanderbilt a New York, Shanghai World Financial Center a Shanghai e International Commerce Center a Hong Kong. Utilizzando fonti secondarie, come documenti governativi ufficiali, riviste accademiche, libri, fonti internet e siti web ufficiali dello studio di architettura, la tesi indaga il modo in cui edifici famosi scelti vengono incorporati in progetti su larga scala. L'indagine esplorerà esplicitamente la storia del distretto in cui si trova il progetto e valuterà i processi di pianificazione, progettazione e realizzazione del masterplan. Siesamina quindi il legame tra architettura iconica e masterplan, nonché la funzione dell'architettura iconica all'interno del masterplan. La tesi analizza anche il modo in cui edifici famosi influenzano lo skyline di una città, gli spazi pubblici e la percezione complessiva.

Keywords: Edificio iconico; spettacolo urbano; skyline della città; placemaking; architettura transnazionale; contesto urbano; Grandi progetti urbani.

ABSTRACT IN ENGLISH

Throughout the world, iconic buildings, especially those designed by renowned architectural companies, are utilized to enhance the reputation and image of cities and generate development opportunities. This dissertation focuses on iconic buildings and examines their role in placemaking, their impact on the urban environment, their effect on the city's skyline, and in particular the role of the iconic building in large-scale urban transformation. It examines, in particular, how large-scale projects and strategies incorporate iconic architecture. This work investigates how the most renowned professional architecture firms operate in the international arena by discussing projects of the same multinational firm in different regions, comparing their buildings and urban contexts, and summarizing the similarities and differences, the challenges, and design strategies in different political, cultural, and historical contexts. The architecture firm Kohn Pedersen Fox Associates (KPF) was selected for a number of reasons. KPF has influenced the skylines and redefined cities globally over the past four decades by designing several iconic buildings in major cities, particularly in Europe, North America, and Asia. This dissertation begins with an introductory study of KPF's transnational trajectories in Europe, North America, and Asia, followed by a collection of examples that provide a broader comprehension of KPF's modes of operation. Then, three projects are examined in depth: One Vanderbilt in New York, Shanghai World Financial Center in Shanghai, and International Commerce Centre in Hong Kong. By using secondary sources, such as official government documents, academic journals, books, internet sources, and official firm websites, the thesis investigates the history of the district where the vast project is located and assesses the masterplan planning, design, and implementation processes. The paper will then examine the link between iconic architecture and masterplan, as well as the function of iconic architecture within the masterplan. The thesis will also investigate how well-known buildings affect a city's skyline, public spaces, and overall perception.

KEYWORD: Iconic building; urban spectacle; city skyline; placemaking; transnational architecture; urban context; large-scale urban transformations.

CHAPTER ONE: COMPETING CITIES

This chapter provides an overview of the worldwide competition among first-tier cities, the phenomena of branded urban projects today, large-scale urban transformation and iconic architecture.

1.1 Competing global and first-tier cities

Cities have been the engines of productivity and growth throughout history and will be essential to the future growth and competitiveness of nations and regions (Eide, 2014). Cities are under increasing pressure to compete with other cities for better development with limited resources and talent markets as they become more internationalized, and the world's metropolitan economies become more connected.

Competition for using scarce resources is the root cause of competition in most cities. In the industrial economy, the competition among cities was mainly for traditional tangible resources such as energy. In the era of a knowledge-based economy, advanced professionals, information, and knowledge have become the most critical production resource. The competition among cities and enterprises has shifted to the competition for talents and knowledge innovation (Yu & Gu, 2004).

1.2 City branding and city image

Anttiroiko argued that, in the context of global intercity competition, cities' primary purpose is to strengthen their competitiveness and that a city's posture and attractiveness play an essential role. Attraction-oriented development methods seek to absorb external resources from the global flow space effectively (Anttiroiko, 2015).

Anttiroiko believes that communities must adopt a systematic approach to boosting attractiveness to avoid high-risk expenditures and short-sighted solutions. The three basic attraction approaches are premises, incentives, and information. Premises are provided due to investments to build and profit from world-class developments,

attractions, or commercial locations. Offering financial incentives as well as tax benefits is part of providing incentives. Massive advertising and promotional efforts are employed on a worldwide scale to catch the attention of potential investors and other stakeholders while providing information (Anttiroiko, 2015). However, excessive use of these approaches in a global competition may result in a race to the bottom, negatively impacting urban growth. (Allard, 2006; Brecher & Costello, 1998; Chien, 2008; UN-HABITAT, 2004; Van Gelder & Allan, 2006). According to Anttiroiko, cities would benefit from looking for a more practical strategy to maintain the current economic life and attract new resources from global value flows, i.e. city branding (Anttiroiko, 2015).

According to Riza, Doralti, and Fasli, the primary goal of city branding is to define the function of cities in a globalized world. For a city to be seen by others as "successful" and appealing, it must be economically successful and have a favorable public image. Therefore, one of the essential key elements for municipal branding is the city's reputation (Riza et al., 2012).

Kevin Lynch, in his book *The Image of the City*, presents the concept of Imageability, which he defined as: "that quality in a physical object which gives it a high probability of evoking a strong image in any given observer. It is that shape, color, or arrangement which facilitates the making of vividly identified, powerfully structured, beneficial mental images of the environment. It might also be called legibility."(Lynch, 1964, p. 9) He believed that imageability is a crucial concept in urban planning that emphasizes cities' order, logic, and aesthetic coherence. (Lynch, 1964). Imageability, which offers a theoretical basis for representing the visual linkages between the numerous parts of the physical environment, is one of the most crucial concepts in physical planning (Al-Kodmany, 2017, p. 13).

1.3 Iconic architecture and urban mega-projects

Generally speaking, the term iconic refers to events, persons, and products that (1) are well-known within the relevant industry (especially in pop culture, fashion, and sports) and (2) have a particular symbolic/aesthetic value, according to sociologist

Leslie Sklair (Sklair, 2010). While "architectural iconicity" describes the special symbolic and aesthetic significance in a building, space, or even in the architect himself, which is symbolic of culture and an era, and this special significance has an aesthetic component, it is this particular combination of fame, symbolism, and aesthetic quality that creates icons (Sklair, 2006, 2010). Leslie Sklair also distinguishes between two separate definitions of iconic status in architecture: (Iconic II) is something distinctive as a singular work of art; (Iconic I) is anything replicating tradition, such as the iconic Villa Palladio or the iconic mosque (Sklair, 2010).

In contrast to the pre-global era, which lasted roughly until the 1950s, where the production and representation of architectural iconography were primarily driven by those in control of the state and/or religion, the dominant forms of architectural iconicity are increasingly controlled by those who own and own the corporate sector (Sklair, 2006). This is owing to city officials' ambition to make cities easily recognizable, creating urban architectural icons that would attract visitors, conference attendees, and participants of large-scale events to generate cash and increase civic pride (Sklair, 2006).

Witold Rybczynski contends that iconic architecture aids in addressing people's needs when a significant and conspicuous structure becomes a tool for attracting visitors and tourists. Because of this, other cities, legislators, and developers are increasingly interested in observing and replicating the success of earlier famous structures. (Rybczynski, 2010).

Cities all over the world have undergone significant change in the late 20th and early 21st centuries as a result of the introduction of numerous new concepts into the intellectual marketplace, including the global city, the megacity, the post-metropolis, the post-Fordist industrial metropolis, etc., which are all vying for prominence in the urban competition. While each concept has unique measurements, they all have two things in common: famous buildings and urban megaprojects (Sklair, 2013).

According to Orueta and Feinstein, the term "megaproject" is most frequently used today to refer to two main types of programs: large-scale programs with complex content (mixed residential uses, service industries, shared facilities, new transportation

facilities, etc.) on the one hand, and large-scale programs with solid symbolic meaning (e.g., certain flagship museums) on the other (Orueta & Fainstein, 2008).

The new generation of megaprojects can be classified into one or more of the following categories, depending on the nature of the operation: a) Regeneration of waterfronts; b) Redevelopment of old manufacturing and warehouse zones; c) Construction of new transportation infrastructures or expansion of existing ones; d) Renovation of historic city districts, typically to meet the special consumer demands of the middle- and upper-class (Orueta & Fainstein, 2008).

Urban megaprojects provide more than only the built environment. They frequently remake cities and connect them to global networks through their platforms. These mega-projects are an essential part of our cities today, acting as significant drivers of urban transformation and defining trends in urban development strategies (Christiaanse et al., 2018).

Leslie Sklair argues that the role of architectural icons in UMPs is more critical than ever in an era of capitalist globalization, where iconic buildings are not only compatible with, but also required by, massive urban developments (Sklair, 2012, 2013). The architecture of UMPs serves as a signifier, creating the image upon which the meaning of UMPs is created. Adopting an "iconic building" designed by a great architect is one of the most apparent methods to make a project physically visible and in the media. As a result, UMPs worldwide are keen to provide renowned architecture. On the other hand, an iconic building cannot exist independently from the UMP. It cannot be used merely for aesthetic purposes without regard for its integration into the master plan. As a result, how a UMP introduces a matching iconic building and how an iconic building is incorporated into UMPs are issues that must be addressed in the development of UMPs and Iconic structures, as well as challenges for cities.

According to the academic literature, iconic buildings and iconic megaprojects are an architectural movement in the context of globalization, dominated by governments and transnational capitalist classes, with designs developed by prominent architects in pursuit of attractiveness, fame, and popularity. This prompts some considerations, for example, on how the development process and the obstacles faced by famous

buildings and great projects differ in cities with varied political and cultural settings, despite their shared purpose of improving cities' competitiveness and attractiveness. Cities in Asia, for example, are considerably different from cities in Europe and America in terms of politics and culture. As a result, when iconic projects are introduced to these diverse locations, the challenges to be considered and the limits to be imposed may change. The rigid framework of a country may impede the perception of specific dynamics in project decision-making and implementation (Ponzini, 2020, p. 127).

On the other hand, because they involve the interests of several stakeholders and affect the project process, landmark projects may also be challenged in democratic nations. On the other hand, the motivating factors and impacts on the development of famous projects could also be connected to the diverse histories of the cities where the projects are located. Examining and comparing iconic initiatives created in nations with different cultural and political contexts can help to investigate these challenges.

Although the terms UMP, large-scale transformation, and masterplan have various academic meanings, the thesis treats them as synonyms and utilizes them to describe the same type of project.

1.4 Examples of UMPs and iconic architecture

Here are a few illustrations of iconic buildings and UMPs. In these cases, the cities try to increase their attractiveness by creating urban megaprojects and introducing iconic buildings designed by renowned architects.

1.4.1 The urban regeneration of Bilbao

Early in the 19th century, Bilbao found high-quality iron ore. As a result of the city's thriving mining and industrial sectors, Bilbao overtook Barcelona as Spain's second-largest industrial hub. (Y. Wang et al., 2020). Bilbao underwent significant reorganization in the 1970s and 1980s, principally to a global industrial shift that resulted in the loss of almost 40% of the region's industrial jobs within a decade. Following the failure of this change, Bilbao started a rebuilding plan that attempted to

transform the city into a "modern, competitive, service-oriented metropolis capable of solving twenty-first-century problems." The downtown waterfront (Abandoibarra) will be redeveloped into a service, business, and cultural hub, acting as the city's new public core and urban entry. The Abandoibarra project is a typical urban mega-project that strives to produce a modern, appealing, imaginative, and entrepreneurial environment for businesses while promoting capital mobility. Cesar Pelli was in charge of developing this area's master plan (del Cerro Santamaría, 2013, pp. 29–33).

Bilbao conducted worldwide architectural competitions for significant public building projects during the transformation process, recruiting internationally recognized architects to participate in its urban development. On the one hand, this action has elevated the design level of urban renewal projects, and on the other, it has increased the international prominence of the renewal projects (Y. Wang et al., 2020). The Bilbao branch of the Guggenheim Museum is the most representative of these projects.

"The whole project, thus, had the potential to attract press attention, but it was Gehry's design that attracted, and continues to attract, millions of people to Bilbao. Gehry himself has said about the Basques' wishes: "They were very explicit. They wanted a Sydney Opera House. They wanted the thing to bring people to Bilbao and put the place on the map. I tried to do it". Krens, who closely participated in the development of the design, wanted a Guggenheim building that could compare in fame and extravagance to the Frank Lloyd Wright building on Fifth Avenue in New York." (del Cerro Santamaría, 2013, p. 37).



Figure 1.4.1.a - Nocturnal View of the Guggenheim Bilbao.(Cerro Santamaría, 2013, p. 39)

Another significant landmark in Abandoibarra, in addition to the much-discussed Guggenheim Museum, is the Cesar Pelli-designed Iberdrola Tower. The Iberdrola Tower, which is 165 meters high and 41 stories tall, is the tallest structure in the Basque Country and the most prominent office tower in all of Spain. With a surface area of 50,000 square meters, it is the tallest structure in the Basque Country and the most famous office tower in Spain. The building is envisioned as a rounded, upward-tapering triangle shape. The entrance to the structure is through a glass sculpture hall that surrounds a sizable, manicured courtyard. The tower has a double-layered exterior that resembles an inclined cylinder in geometry. The building, which serves as the Iberdrola Power Company's headquarters, also has a helipad for use in case of emergencies.

Iberdrola Tower is adjacent to the main areas and structures that make up Bilbao in the modern age. The Guggenheim Museum, the Euskalduna Music and Congress Center, and its surroundings constitute the city's new financial and economic symbol. The city depends on high-value-added company operations, essential to creating the perfect working environment for highly qualified employees. Cities hold the best rankings with higher percentages of the creative class, which leads to more significant

economic innovation and prosperity. To create a thriving creative community, cities must do everything they can to draw and keep creatives (Sanz et al., n.d.).



Figure 1.4.1.b - Iberdrola Tower in Abando, Bilbao. (Source: <https://travel.syqic.com/en/poi/iberdrola-tower-poi:20172795>)

1.4.2 Kuala Lumpur City Center and Petronas Twin Towers

Since the 1990s, Kuala Lumpur and its surrounding areas have experienced large-scale developments, most notably the Kuala Lumpur City Centre (KLCC) project and its iconic twin towers. Since March 1993, KLCC, a 100-hectare urban regeneration area in Kuala Lumpur, Malaysia, has served as the city's primary central business district. It also has the most shopping malls, luxury hotels, luxury residences, and corporate offices in Kuala Lumpur, making it the most cosmopolitan neighborhood in the city. Cesar Pelli's Twin Peaks, at 452 meters and 88 stories above ground, is the twentieth century's tallest skyscraper.

Tim Bunnell's research indicates that the Twin Towers symbolically and practically contributed to Malaysia's post-colonial nation-building. The fourth Prime Minister of

Malaysia, Dr. Mohamad, was a strong supporter of the Twin Towers and intended them to serve as a symbol of and a source of pride for Malaysians. Due to Malaysia's colonial heritage, a rethinking strategy was required to combat the underdevelopment of colonialism in people's minds. The idea to redesign Kuala Lumpur aimed to reproduce the "Western" urban imaginary: a Third World metropolis is teeming with irreverence, with fabled decadent luxury contrasted with slums and shanty villages (Bunnell, 2013, p. 66).

The record-breaking height of the Twin Towers has branded Kuala Lumpur in the minds of the world's map, and the KLCC is regarded by its supporters as "world-class" infrastructure, extending the city's reach globally. The Twin Towers of Kuala Lumpur are frequently depicted in promotional, commercial, and/or tourism materials from other countries. The Twin Towers are meant to serve as a "cultural landmark" for Malaysia and Kuala Lumpur, putting both places on the "global map" (Bunnell, 2013, pp. 62, 65).

Tim Bunnell believes that the name Twin Peaks Towers has more effectively branded the city and the country in the global geographic imagination through advertising excursions than formal local marketing campaigns of Kuala Lumpur City Hall or Tourism Malaysia. With the help of tourism promotions like "The Real Asia Malaysia" and international advertising, The Twin Peaks Towers have become a very effective local marketing and national marketing strategy (Bunnell, 2013, p. 72).

CHAPTER TWO: GLOBAL CIRCULATION OF URBAN SPECTACLES

2.1 Urban spectacles

Urban spectacles are spectacular public performances, such as festivals and large-scale events involving capitalist markets, various social relationships, and international trade in goods, capital, technology, cultural forms, and people. Spectacle has become increasingly common in media pictures, advertising, and architectural design over the years in all of their forms, styles, and approaches (Gotham, 2005). Buildings, avenues, and public spaces were historically used by the power elite of the religious, political, and economic systems to express and demonstrate their dominance symbolically. Today, however, the concept of urban grandeur encompasses more than simply buildings and urban settings; it also significantly impacts how various groups within our society perceive specific urban environment elements. This makes it possible to think of the architectural landscape as a tool for regulating urban behavior and space and promoting or expressing particular political themes (Ponzini, 2020, p. 115).

By using the example of an airline brochure with a model of the Frank Gehry-designed Guggenheim Museum on the cover, Professor Ponzini argued the importance of urban spectacle in promoting urban development and discusses their desired urban effects. Global and second-tier cities are working hard to establish their stunning icons or urban landscapes to draw attention worldwide due to increasing mobility and the growth of mass tourism. They typically take very symbolic measures (such as city branding, communication events, etc.) and very real ones, such as building new structures and locations to symbolize their cosmopolitan and tourist-friendly identities (Ponzini, 2020, pp. 116–117). Architectural design often dazzles clients in an era of speedier communication by creating stunning buildings and urban environments that draw tourists and consumers, generating tourism and rent (Gospodini, 2002).

This phenomenon is widespread in second-and third-tier cities around the world. Still, from a political viewpoint, methods for creating architectural spectacles may vary depending on the government and cultural setting of the city. For instance, in some

nations, the production of architectural spectacle is under the control of the state, as is the subsequent urban development and real estate appreciation (Ong, 2011). Therefore, the spectacularization of contemporary architecture and urban environments may have been impacted by the context of governance and the general acceptance of transnational projects.

2.2 Supertall skyscrapers and their transnational trajectories

One of the most obvious ways of making a project visible, both physically as well as in the media, is to employ what has been termed “iconic architecture,” designed by celebrity architects; another solution is the erection of always taller buildings competing for height (Grubbauer, 2013). Skyscrapers, according to Ong, have become a way of expressing the strength of the state in specific geographical situations or a physical depiction of policy forcing its presence on the global arena. (Ong, 2011). As Eugene Kohn, one of the founders of KPF, said in an interview, “I do take the point that ego and image have played a role in the tall building: not everyone needs to build a tall building, but some have one because they want the image. ...In New York, the height was an image competed for in and before the 1930s (in the Singer and Woolworth Buildings), so they wouldn’t announce their heights until the very end.” (Kohn, 2011). Skyscrapers are regarded economically as a part of the distribution of capitalist wealth and its agglomeration through real estate. Super tall skyscrapers can be used to create wealth, for example, as a tourist destination or a high-end office space in a financial sector that generates significant revenue (Graham, 2017; Harris, 2015). According to RET Riedel China Commercial Real Estate Research Center data, high-rise office towers have higher rental returns than those nearby. The International Finance Center (IFC) in Hong Kong is currently 55 percent more expensive to rent than Central, the city's main business district. In comparison, supertall buildings in Shanghai and New York have 17 percent more costly rents than those in the commercial districts where they are located (RET, 2014). Tall buildings' spectacles and branding effects can also affect real estate speculation; for instance, the price of neighboring properties will rise if a new super-tall building is built nearby (Kohn, 2011).

Understanding the cross-national development of supertall buildings over time is essential. The geographic distribution of extremely tall buildings and how they have changed over time can be used to infer general trends in urbanization and a city or nation's desire for its stunning modernizing emblem (King, 1996; Ponzini, 2020, p. 130). Rovelli's rigorous research of all buildings over 200 meters constructed between 1909 and 2016 revealed that, up until the 1980s, the initial appearance of the superstructure was primarily observed in the United States and Japan, mainly for office buildings. The localization of superstructures from Western nations to Asia has become especially noticeable since the 2000s. The skyscraper, a symbol of capitalism and the beginning of the period of globalization, has come to represent inter-city rivalry for dominance in the countries of the East due to the growing convergence of nations' urban planning, development, and aesthetics. China currently holds the top position in the world, accounting for about half of all superstructures. Here, the state's power has sparked a race to the top with hundreds of new buildings that are not only based on the massive economic push of real estate but also used for the nationalization of cities like Shanghai, Shenzhen, or Hong Kong (Rovelli, 2015, 2017).

On the other hand, Supertall buildings have changed their functional mix over the last two decades. Since the mid-1990s, there has been significant growth in the overall number of supertalls and an increase in residential and mixed-use, while the number of hotels has increased since the 2000s (Ponzini, 2020, p. 132). Research by the RET Riedel China Commercial Real Estate Research Center found that although almost half of the supertall buildings are still exclusively office developments, the number of supertall buildings used for mixed-use purposes, hotels, and homes has dramatically expanded in recent years. Particularly, the share of exclusively residential developments has increased from 0% in the 1990s to 18% now (RET, 2014). Graham claims that the rise in hotel skyscrapers reflects how many cities have changed from being centers of production to being centers of consumption and recreation (Graham, 2017).

After learning about the rationales for their construction and the shifting trends in their geographic distribution in recent decades, especially in locations with different governance and cultural contexts, I thought it would be interesting to investigate further

how supertall buildings circulate between countries around the world. What specific challenges must architects and designers overcome when designing skyscrapers in cities with such a wide range of contexts?

2.3 Multinational design firms' strategies in contemporary cities

Coxe, Gutman, and other scholars synthesized three organizational strategies for architectural studios: strong idea, strong service, and strong delivery (Ponzini, 2020, p. 177). The Strong Ideas strategy is to provide specific capabilities for creative and inventive projects, in which case using celebrities or specialized professionals may be crucial. Individual designers' charisma and personalities are frequently at the core of successful creative studios. They frequently consist of a team of employees who frequently collaborate with celebrities or use their identities to build brands. To mention a few, there are Norman Foster, Frank Gehry, Zaha Hadid, and Daniel Libeskind. They frequently pay attention to the building's architectural exterior, which is frequently connected to its aesthetic appeal and symbolic significance. Since their high level of specialization is only occasionally necessary in each city, they typically work in diverse geographical contexts.

Second, Strong Services emphasizes experience and reliability throughout the challenging design, development, and implementation process. A specific area of the construction market that is out of the reach of many other specialists is the focus of The Strong Service Studio. More precisely, the typical Strong Service firm has a good reputation since it organizes the design and implementation work cycle according to a standard of efficiency. Investors and developers value time and cost reliability because they believe they will increase profits. These studios tend to have a business image rather than being centered on a star's image. These firms frequently bear the founders' or principal architects' initials in their names, as in the cases of SOM (Skidmore, Owings, and Merrill), HOK (Helmuth, Obata, and Kassabaum), and KPF (Kohn, Pedersen, and Fox). These organizations occasionally specialize in particular building types, such as office buildings, skyscrapers, stadiums, etc., or they may focus on the

complete life cycle of the building product (including engineering, public relations, urban and community planning, etc.) (Ponzini, 2020).

Third, Strong Delivery tends to produce more routine projects and services where economic efficiency and the repetition of established solutions to architectural problems are a company's core business (Ponzini, 2020, p. 177). "Strong Delivery technologies provide efficient service on routine projects for product-oriented clients. Strong Service technologies provide experienced and reliable services for complex projects. Strong Idea technologies provide deliver singular expertise or innovation for unique projects." (Heintz, 2012, p. 596)

This thesis will analyze the organizational structure and method used by international architecture firms implementing Strong Service strategies and the overall trajectory. The thesis will review how one prominent firm (namely KPF) designed important landmarks on the global scene by skillfully handling complex processes.

CHAPTER THREE: RESEARCH QUESTIONS AND METHODOLOGY

3.1 Objectives and research questions

From the foregoing research, it is clear that cities, particularly global ones, are getting increasingly competitive. In the city competition, each city competes by building its brand and creating its distinct city image to draw tourists and investment. Large-scale projects and distinctive architecture designed by well-known international architectural companies are frequently introduced in these cities to increase their competitiveness.

The iconic buildings in a city, especially the high-rise ones, play a significant role in defining its overall spatial character. Famous high-rise buildings in metropolitan areas are one of the critical components that help people read and understand the city. The study of iconic high-rise building branding can aid in understanding the city's character while serving as a resource for upcoming design work, transformation, and creation of new cities.

In light of this trend, it is necessary to look into the global circulation of projects from a distinctive urban perspective. We shall concentrate on branded iconic skyscrapers and the masterplan in which they are positioned in the thesis. The thesis will investigate the function of iconic architecture in creating and publicizing urban megaprojects (UMPs) in cities that have gone global, as well as how branded structures designed by well-known architects and multinational companies move about.

The core questions include:

- How is iconic architecture used in the large-scale development process? What is the iconic building's role in the masterplan?
- What are the similarities that exist between one iconic project and another? And what are the differences in terms of challenges and adaptations in various contexts?

3.2 Method and collection of data

To answer these questions, I investigated three iconic buildings designed by the same global architectural firm and the large-scale transformation where the iconic building is located. I will create an analytical framework to analyze the selected examples and compare their similarities.

This work is based on scientific papers, books, and articles published by research institutes and researchers, as well as local institutions, architectural, and planning organizations. The case studies' information was gathered from local government planning agency websites and relevant literature.

3.3 Case study selection

When selecting cases, the following features are considered :

- Iconic buildings are recognized internationally and designed by the firm KPF.
- The iconic buildings are located in critical commercial areas of a global metropolis—the presence of large renovation projects or megaprojects with similar masterplan sizes.
- The projects are located in different countries, with different social and cultural backgrounds and different urban planning approaches.

Based on the above considerations, three iconic buildings designed by KPF are selected for this study. The selected iconic supertall buildings and the large-scale transformation projects are:

- One Vanderbilt and Midtown East District in New York.
- International Commerce Centre and West Kowloon District in Hong Kong.
- Shanghai World Finance Center and Lujiazui Financial Central District in Shanghai.

Three parallel cases were carried out in Shanghai, Hong Kong Special Administrative Region of China, and New York, USA. The three case studies are situated in cities with various urban planning frameworks. China and the United States have different approaches to urban planning, namely state-led and market-led. However, Hong Kong, which went through the British colonial era, has been influenced by Western culture in terms of political, economic, and urban development paradigms. It still maintains a portion of the British-inspired system despite being returned to Chinese jurisdiction in 1997. As a result, these three cities take various approaches to the creation and execution of master plans as well as the design and construction of iconic buildings. The investigation of these three situations can aid in identifying how multinational architecture firms function in locations with various planning systems and cultural backgrounds.

3.4 Analysis Template

The thesis will specifically break down the research questions to approach the case studies and information to answer the research questions. This will allow us to explore further the specific performance of sizeable multinational star construction companies in these cases and make the case studies comparable. The following eight points form the basis of the thesis' common template: location, historical background, masterplan, urban development process, iconic architecture, the implementation process, the incorporation of iconic architecture into the masterplan, urban effects of the iconic building, and visual effects.

3.4.1 Location

This section begins by providing a general overview of the city and the particular region where the project is located, from which we may learn about the status and relevance of the city in the world as well as the role and value of the region inside the city. The urban megaproject's basic information is then presented, including its precise location, purpose, and size. This information can help the reader get a general sense of the

project's geographic context, which will help them better grasp the information on the project's political, historical, and cultural context that follows.

3.4.2 Historical background

This section covers the project's historical context and how it came to be. A description of the site's historical background can help better understand the project's and master plan's characteristics and impacts. Because the historical context and birth process differ significantly between projects, each project is analyzed from a different starting point based on the context. Some projects, for example, are located in areas where urban planning was completed over 100 years ago, whereas others were planned from the ground up from a vacant lot. The political, cultural, and economic factors underlying each project will be addressed when analyzing its background. The historical context will reveal the reasons for the project's development, the actors who drove it, and the historical and political challenges it faced.

3.4.3 Masterplan and urban development process

This section will cover the project's development process. A masterplan is typically produced first as a plan to provide overall guidance or direction in large-scale transformations. This plan specifies or addresses the various phases of the large-scale transformation in multiple ways. This section will describe the entire masterplan process, from the beginning of the project until the plan's completion. Because the cities where the projects are located have varied political and cultural histories, the masterplan development process in all three cases will be somewhat different. Typically, the masterplan is created by a collaborative effort between several public and commercial sectors. Diverse projects have different leaders, participants, and stakeholders, all critical aspects of the project's progress. Furthermore, the masterplan planning process frequently results in arguments and debates involving multiple stakeholders. The rationale and contents of these arguments varies in different circumstances, as do the solutions to these problems. By examining and these factors, we may better comprehend the operation mode of multinational architecture firms in varied circumstances.

3.4.4 Iconic architecture

This part will focus on iconic architecture, and the analysis will begin with basic information about iconic architecture, such as height, function, and exterior design. By describing this information, it will be possible to compare the building aspects of different projects and to see the differences and circulated features of multinational firms' projects in different regions.

3.4.5 The implementation process

The process of developing an iconic building should not be disregarded because it provides insight into the project's political system and cultural setting. Studying the process will help us understand the global architectural firm's level of involvement in the project and how it was involved. As a result, for this section of the analysis, I will collect and present as much information about the implementation process as possible, such as the challenges encountered during the building's implementation, the constraints of the site, the modifications and compromises made during the performance of the building plan.

3.4.6 The incorporation of iconic architecture into the masterplan

An iconic building cannot exist apart from the UMP and cannot merely produce an eye-catching effect without being considered part of the masterplan. This analysis will examine how iconic buildings fit into the masterplan and function. The study's directions include the status and importance of iconic buildings in UMP, the relationship between iconic buildings and other projects in UMP, the relationship between iconic buildings and public spaces in the masterplan, and the extent to which iconic building design is consistent with the larger project's development goals, among others.

3.4.7 Urban effects of the iconic building

An iconic building usually has diverse effects, opportunities, and values on the surrounding. The impact of iconic buildings on UMP and the city will be examined in this section. For instance, the effect on the city's economy, the effect on the city's public

spaces, the effect on transportation, the impact on tourism, the influence on the city's reputation, etc.

3.4.8 Visual effects

This section will display images of the building taken from various angles and provide commentary to illustrate how the iconic landmark has impacted the UMP and the city. These evaluations help us comprehend how the landmark building visually interacts with the city and the initiatives around it. Through the images, we can more clearly observe how the building alters the city skyline and its effect on how the city is seen. This section is an addition to 3.4.7, focusing mainly on the iconicity and visual aspects, which are essential aspects of the thesis.

CHAPTER FOUR: CASE STUDY----Three Skyscrapers Designed by KPF

In the first section of this chapter, I will outline KPF's transnational networks and trajectories, discuss how the company operates internationally, and then show where its supertall buildings are located in different cities of the world. I will investigate the three cases in the second section using the analysis template outlined in the chapter above.

4.1 Kohn Pedersen Fox Associates (KPF)

KPF is a well-known architectural firm on a global scale. The company is committed to providing design services to public institutions and individuals with a worldwide architectural practice that includes iconic buildings in significant cities. It specializes in the architecture of all styles and scales. The breadth of experience from these projects gives KPF's architectural work in various countries a global perspective. Since its establishment in 1976, the KPF firm has quickly become a leading architectural company renowned for its supertall and high-rise buildings. KPF has gained recognition on a global scale for its varied design concept, serene architectural aesthetic, and meticulous attention to detail, which have come to symbolize the profession of Western architects.

The firm's outstanding design team has earned it one of the world's most known architectural firms. The firm's design expertise is evident in the fact that KPF's work has been recognized over many years of practice and has received over 200 awards.

4.1.1 The firm's networks and trajectories

Global design firms must develop lasting relationships with their clients since repeat business from the same client provides a sizeable revenue. An effective tool for acquiring access to particular procurement possibilities and ensuring clients of the technical and financial feasibility of their projects may be a portfolio of completed projects. Consolidation makes a greater understanding of regional culture, market characteristics, and cycles possible. They are establishing a local hierarchy capable of

supporting project delivery and a network of potential clients with specific requirements (Ponzini, 2020, pp. 182–183).

Over the years, the firm has grown to over 700 employees, led by 34 principals, with offices in New York, London, San Francisco, Shanghai, Hong Kong, Seoul, Abu Dhabi, Berlin, and Singapore. “All principals convene regularly to ensure the cohesiveness of philosophy and share knowledge about their work. Each principal understands and participates in the global breadth of the practice. The exchange of staff between offices is a regular practice. Often a single project will avail itself of expertise residing in multiple offices – working together as a single team – to derive maximum benefit from the firm's broad knowledge base.”(*Profile by Kohn Pedersen Fox (KPF)*, n.d.)

KPF's early projects were primarily in the United States, where the firm was founded, with projects in New York, Philadelphia, Chicago, Boston, and Cincinnati; its mid-career work expanded from New York to Washington, D.C., Dallas, Hawaii, and Metairie, as well as the United Kingdom and Germany in Europe. Its most recent projects have taken it to the Netherlands, Sydney, Saudi Arabia, China, Singapore, and Thailand, among other places. Other countries include Saudi Arabia, China, Singapore, and Thailand (S. Wang, 2019).

I found data about projects from the late 1970s to the present (deriving information from Professor Ponzini's research team and the official website: www.kpf.com). Below is a localization map of the projects.



Figure 4.1.1 – Localization of projects designed by KPF from the year 1976. Source: elaboration of data retrieved from Professor Ponzini’s research team and the official website: www.kpf.com

Figure 4.1.1 depicts the global localization of the 432 projects performed by KPF in the database. They are primarily concentrated in North America (156 projects), Europe (86 projects), and Asia Pacific (167 projects). South America has six projects, Africa has three, and the Middle East has fourteen.

There were 32 projects throughout the 1970s and 1980s, with just one project taking place in Europe and the others in the United States. There were 44 projects in the 1990s (28 projects in the Americas, 9 in Europe, and 7 in the Asia Pacific). There were 92 projects in the 2000s (28 projects in North America, 32 in the Asia Pacific, and 24 in Europe). The total number of projects from 2010 to 2022 is 214. (68 projects in North America, 98 in the Asia Pacific, 37 in Europe, 9 in the Middle East, and 2 in Africa).

We may observe a pattern whereby KPF's programs were predominately directed toward the United States up to the 1990s. The company has been growing in Europe and Asia since the 1990s, but its primary market is still the United States. The number of projects in Europe and Asia started to catch up to the number of projects in the United States in the 2000s. Projects in the Asia Pacific region significantly outperformed those in the United States in the 2010s. Additionally, the number of projects in Europe has reduced to only about half that in the US (Figure 4.1.1).

4.1.2 Supertall skyscrapers designed by KPF in the world

Understanding the volume and transnational trajectories of this building form over time requires a worldwide perspective. Still, it's also vital to note that only particular skyscrapers constructed by certain architects attract media and investors' attention. Tall buildings are called skyscrapers over a certain height and supertall above 200 or 300 meters (conventions may vary). (Ponzini, 2020, p. 130)

The mid-to-late 19th century saw the emergence of skyscrapers in the US, which then saw rapid growth in the following decades. Because of this, the US is also known as the "home of tall buildings." Based on the original high-rise office buildings, tall buildings in the United States have created a wide variety of architectural forms, enriched architectural shapes, and helped to renew the urban landscape. These tall

buildings include high-rise residential structures and high-rise complexes. Tall buildings have not only given mankind a wide variety of new uses.

KPF, founded in the United States, is regarded as one of the world's biggest and most significant firms for designing tall buildings. KPF firms have created many of the most recognizable landmarks in important cities. "In 1996, there were only four supertall buildings in existence. In the decades since, the upward pace of the supertall has been swift and frequent – there are now more than 100 dotted throughout the world - with five of the ten tallest designed by KPF."(*Icon in the Sky*, n.d.)

The buildings by KPF taller than 300 meters and their locations worldwide are shown on the map and list below.



Figure 4.1.2.a – Localization of supertall buildings (higher than 300m) designed by KPF.
Source: elaboration of data retrieved from the official website: www.kpf.com and additional data

Name	City	Continent	Height	Construction year
Shanghai World Financial Center	Shanghai	Asia	492 m	1997-2008
International Commerce Centre	Hong Kong	Asia	484 m	2002-2010
Vanke Center	Chongqing	Asia	458 m	2006-2009
Northeast Asia Trade Tower	Incheon	Asia	305 m	2007-2014
Chow Tai Fook Finance Centre	Guangzhou	Asia	530 m	2009-2016
Ping An International Finance Centre	Shenzhen	Asia	599 m	2010-2017
Lotte World Tower	Seoul	Asia	555 m	2011-2016
CITIC Tower	Beijing	Asia	528 m	2011-2018
Yongsan IBD Block H	Seoul	Asia	385 m	2012-2016
China Resources Tower	Shenzhen	Asia	392 m	2012-2018
Suzhou International Finance Square	Suzhou	Asia	450 m	2012-2019
One Shenzhen Bay	Shenzhen	Asia	341 m	2014-2018
30 Hudson Yards	New York	Northern America	386 m	2014-2019
Autograph and Luminary Towers	Jakarta	Asia	383 m	2014-2022
One Vanderbilt	New York	Northern America	427 m	2016-2020
Ping An Financial Center	Jinan	Asia	360 m	2017-2022
One Bayfront Plaza	Miami	Northern America	320 m	under construction
Panda Tower	Chengdu	Asia	488 m	under construction
Kamal Tower, Doha	Doha	Asia	408 m	under construction
Hubei Garden	Shenzhen	Asia	500 m	under construction

Figure 4.1.2.b – List of supertall buildings (higher than 300m) designed by KPF. Source: elaboration of data retrieved from the official website: www.kpf.com and additional data

Figure 4.1.2 displays the location of the KPF-designed supertall buildings, which is taller than 300m, in the global database. The projects are spread across Asia (17 projects) and Northern America (3 projects).

The first project higher than 300 meters was in Shanghai, Asia (Shanghai World Financial Center), and it was the only one that began construction in the 1990s. The remainder of the projects were constructed after the 2000s, particularly after 2010. According to KPF's global trajectory, KPF's projects in Asia began to expand dramatically in the 2000s. The number of projects in Asia overtook the number of projects in North America in the 2010s. The course of KPF's super-tall project follows that of the overall project.

On the other side, 12 of the 20 supertall projects are in China. The reason could be that China's economy was rising rapidly at the beginning of the 21st century, and cities were rapidly urbanizing. Furthermore, China joined the World Trade Organization in 2001, and China's first-tier cities began to compete with global cities, requiring the construction of modern buildings to present a modern metropolitan image to the world, enhancing the city's competitiveness and attracting multinational companies. Despite the majority of tall buildings in Asia, three buildings exceeding 300 meters in height were built in the United States in the 2010s, two of which were in New York.

The thesis will choose projects from locations with various cultural and political backgrounds to explore how multinational companies operate in multiple circumstances. Since the majority of the supertall buildings on the list above are in Asia, I decided to pick three projects there that are situated in three cities with various political and cultural histories. The International Commerce Centre in Hong Kong and Shanghai World Financial Center are the first two, followed by One Vanderbilt in New York, comparable in height to the first two.

4.2 One Vanderbilt and Midtown East New Rezoning Plan, New York

NEW YORK CITY	
City Area (Land):	778.19 km ²
City Population (2020):	8,804,190
Population Density:	11,313/km ²
GDP (2020)	\$830 billion
MIDTOWN EAST DISTRICT	
Site area (sqm)	880,000
GFA (sqm)	5,574,000
Density (FAR)	6.33
Residential	1.60%
Mixed Commercial/Residential	6.70%
Commercial/Office Buildings	81.90%
Civic (Education, Arts, Culture Centre)	9.80%
ONE VANDERBILT	
Design firm:	Kohn Pedersen Fox
Owner:	SL Green Realty
Function:	Office
Construction started:	2016
Opened:	2020
Cost:	\$3.31 billion
Height:	427 m
Gross floor area:	162,600 sqm
FAR:	30

Table 4.2 - Key information about the studying case (Source: Aversa, 2020; Department of City Planning, 2017b, p. 2; United States Census Bureau, 2021; U.S. Census Bureau, 2021; Von Klemperer, 2015).

4.2.1 Location

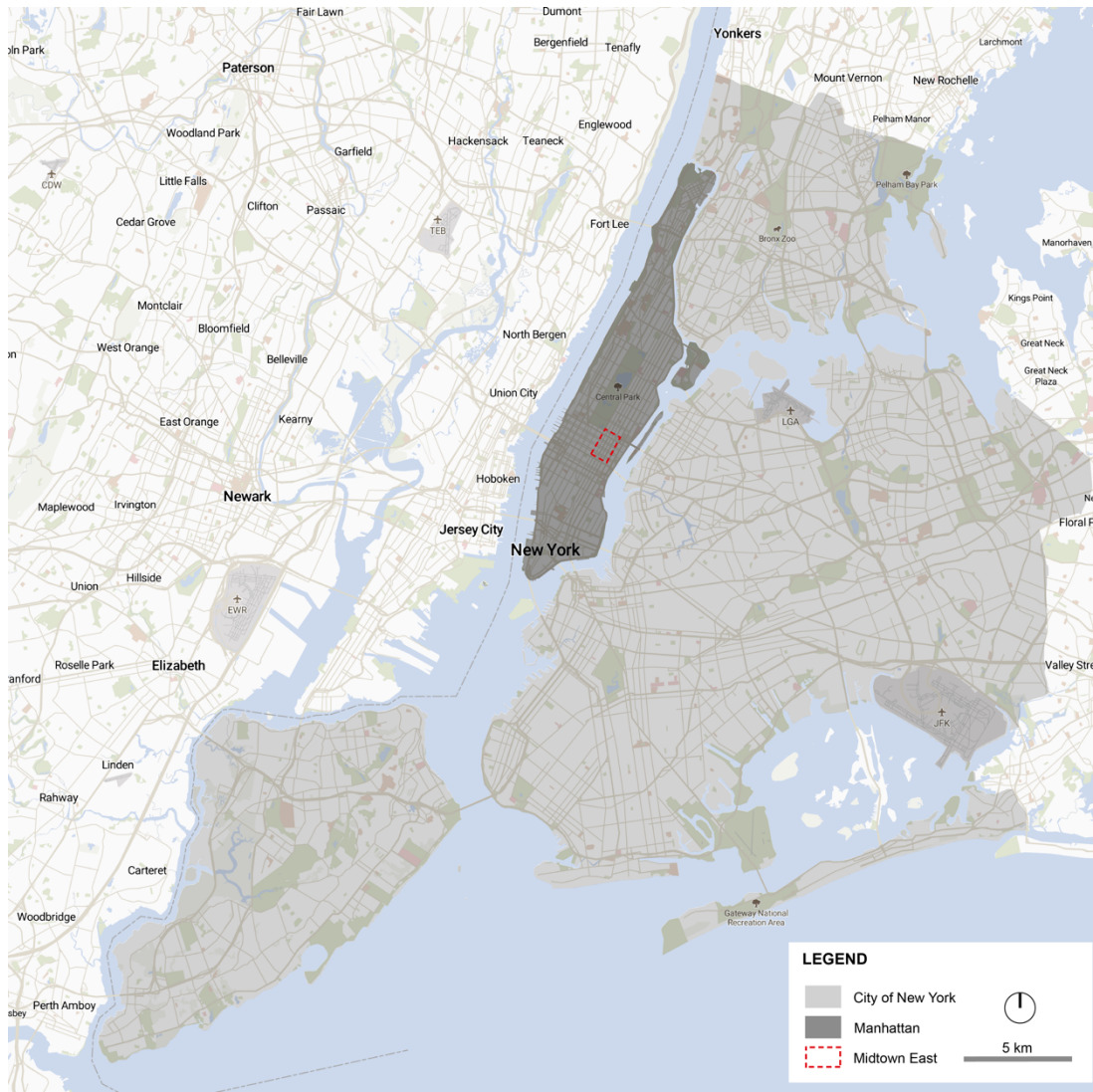


Figure 4.2.1 – Location of Midtown East and Manhattan within New York City (Source: Mapbox, adapted by the author)

4.2.1.1 Manhattan, New York City

Located at the southern tip of the U.S. state of New York, New York City is the most populous city in the United States, the heart of the New York metropolitan area, and one of the largest cities in the world, a cosmopolitan city with significant influence on global economics, business, finance, media, politics, education, and entertainment (Gothamist, 2016).

Manhattan is the smallest and most densely inhabited of New York City's five boroughs. In 2015, Manhattan had the highest population density of any county in the United States, at 27,812 people per square kilometer (Mann & Valera, 2013). It is higher than any other U.S. city. Manhattan is the cultural, administrative, and financial center of New York City. It is home to the headquarters of many significant international corporations, the United Nations, Wall Street, and several prestigious institutions. Manhattan is frequently referred to as the world's financial and cultural center (Barry, 2001; Michael, 2010; Sorrentino, 2007).

4.2.1.2 Midtown East District



Figure 4.2.1.2 – Location of Midtown East in Manhattan (Mapbox, adapted by the author).

The East Midtown office district is one of the largest job centers in New York City and a premier business address. Centered around Grand Central Terminal, this area is one of New York City's major transportation hubs and civic spaces. The rezoning area,

generally bounded by East 39th Street to the south, East 57th Street to the north, Second and Third avenues to the east, and Fifth Avenue to the west, contains approximately 70 million square feet of office space, about 200,000 workers, and numerous Fortune 500 companies (NYC Department of City Planning, 2013).

4.2.2 Historical background

4.2.2.1 The rise of midtown east

In the seventeenth and early eighteenth centuries, what is now the redistricting area was wooded with sparsely settled farms. In the nineteenth century, the area transformed from rural to suburban to urban. The fast-paced growth led to a strange mix of land uses; for example, in some places, small, dilapidated shacks were adjacent to large, opulent estates. The mid-nineteenth century also marked the natural emergence of class-segregated neighborhoods. The industrial working class began to emerge in the 1820s and 1830s. There was an influx of European immigrants, and on the Lower East Side, the poor inherited the vacant houses of the rich while the rich continued to move north. Neighborhood differences grew, and a steady uptown migration spread. In the 1850s and 1860s, the countryside north of Manhattan's 42nd Street was not pleasant; it was scattered with junkyards, shantytowns, and run-down taverns—all punctuated by prominent rocks.

The completion of Central Park in 1857 significantly impacted Manhattan's East Side, elevating the neighborhood's social status, and making it one of New York's most fashionable residential areas. In 1871 on East 42nd Street, Grand Central Terminal was built, essentially moving the city's main transportation hub "uptown" and away from the densely populated areas of lower Manhattan. Between 1878 and 1881, the East Side of Manhattan underwent further changes with the construction of the Third Avenue Elevated train, which brought more people and businesses to the area (Department of City Planning, 2017c). By the 1880s, various office-based industries discovered that it was more profitable to relocate closer to consumers. Midtown became mostly an office-based sector after these enterprises relocated. Midtown experienced a commercial development boom in the mid-twentieth century,

and land values had increased sufficiently to make skyscrapers a feasible investment (Barr, 2016, 2019). Many world-famous buildings, such as the Chrysler Building skyscraper, Rockefeller Center, United Nations Headquarters, and Grand Central Terminal, began to rise in Midtown East. The East Midtown office district is one of New York City's leading job centers, with more than 80% of the property dedicated to high-intensity commercial office buildings (see figure 4.2.2.1). It is also a significant source of economic activity and jobs in New York.



Figure 4.2.2.1 - Existing Land Use of East Midtown (Department of City Planning, 2017b, p. 2). Adapted by the author.

4.2.2.2 Current situation and long-term challenges

According to the research done by the NYC Department of City Planning, “East Midtown is today one of the most sought-after office markets in the New York region. One of the key strengths of East Midtown has been the wide range of office space that can be found there, including buildings of different sizes and ages, allowing the area to meet the needs of diverse tenants at varying price points. Overall, East Midtown’s

office tenants have historically been financial institutions and law firms, with some of the country's largest banks headquartered there. Recent trends have both reinforced and altered this role. The area has become home to the City's hedge fund and private equity cluster because of the area's cachet and easy access to the Metro-North commuter shed. This has led to a spike in rents for high-quality space in the area's top-tier buildings. On the other end of the office market spectrum, the area has also developed a more-diverse roster of tenants as rents dropped with the economic downturn, accommodating tenants previously priced out of the area. Both trends have helped the area recover from the 2008 recession, with vacancy rates falling to 7 to 8% percent." (NYC Department of City Planning, 2013, p. 3)

"While East Midtown has historically performed strongly as an office district, its future as a highly competitive office district is unclear."(NYC Department of City Planning, 2013, p. 3). The city has identified several long-term challenges that affect the East Midtown office district. The challenges include:

- 1, Existing office buildings are aging, with more than 60 percent of buildings over 50 years old (see figure 4.2.2.2.a) and only 34 percent of buildings with state-of-the-art facilities and high-end finishes.

- 2, New office space growth is difficult, with a lack of space to accommodate new large office buildings and demolition and reconstruction costs too expensive. Existing commercial zoning in most of the area allows commercial density to an as-of-right Floor Area Ratio (FAR) of only 15 along the avenues and 12 on some mid-blocks, which are not appropriate for East Midtown's current needs (see figure 4.2.2.2.b).

- 3, Public realm challenges are reflected in the overcrowding of some subway stations, narrow sidewalks, and lack of public space.

- 4, The process of increasing construction through transportation improvements and transfer of development rights is too cumbersome(NYC Department of City Planning, 2013).

Because of these existential challenges, the area will be unable to deliver the cutting-edge space and amenities that tenants require, vital to the area's continued

competitiveness regionally, nationally, and worldwide. As a result, the development believes that unless these long-term issues are addressed, East Midtown will lose its appeal as a business district. The significant public investment in the area's transportation infrastructure will fall short of its full potential to generate jobs and tax revenue for the city. (NYC Department of City Planning, 2013).

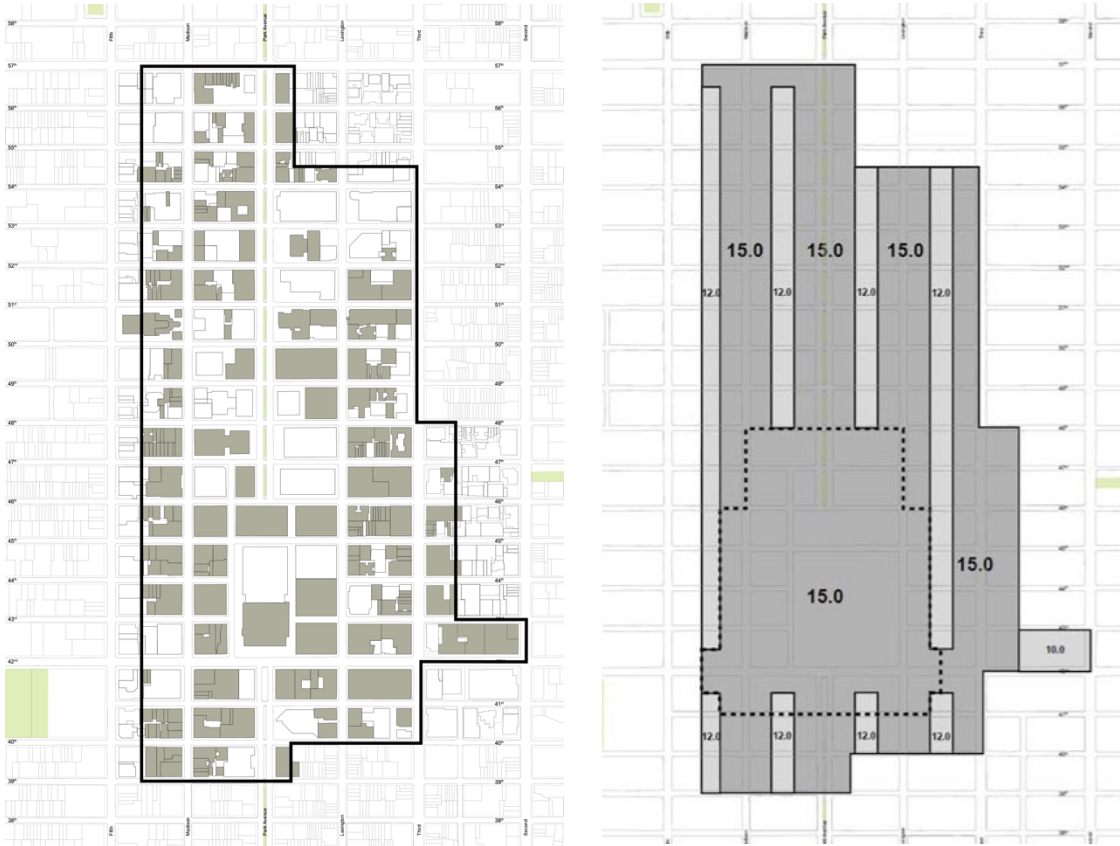


Figure 4.2.2.2.a - Buildings within the district were constructed before 1961 (Left). Source:

https://www1.nyc.gov/assets/planning/download/pdf/plans/east-midtown/aging_office_building.pdf

Figure 4.2.2.2.b - Existing maximum as-of-right FAR (Right). Source:

https://www1.nyc.gov/assets/planning/download/pdf/plans/east-midtown/exisitng_maximum_as_right.pdf

4.2.3 Masterplan and urban development process

4.2.3.1 The rezoning proposal in 2013

Based on the abovementioned issues, Mayor Michael R. Bloomberg directed the Department of City Planning (DCP) to release the East Midtown Study in 2012, followed by a rezoning proposal for Midtown East in 2013 (Shen & Zhu, 2019).

The proposal calls for creating a new Midtown East zoning district within the Midtown Special District, which would allow Qualifying Sites within the zoning district to increase their floor area ratio based on an as-of-right permit without having to obtain a special permit. Eligible sites include sites along most street frontages, 200 feet (approximately 60m) of street frontage along 42nd Street, and areas of at least 25,000 square feet (about 2,300 m²) in size (see figure 4.2.3.1.a) (NYC Department of City Planning, 2013).

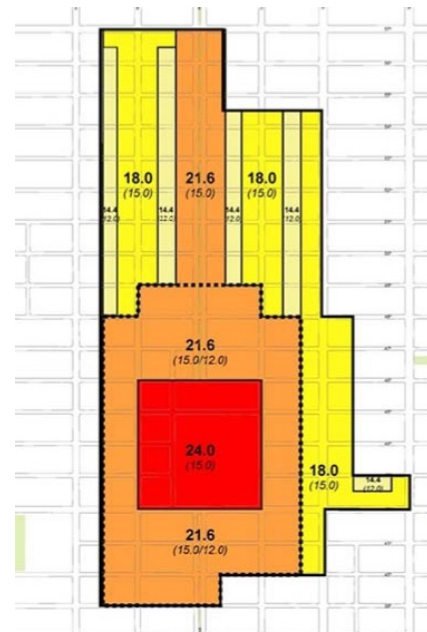
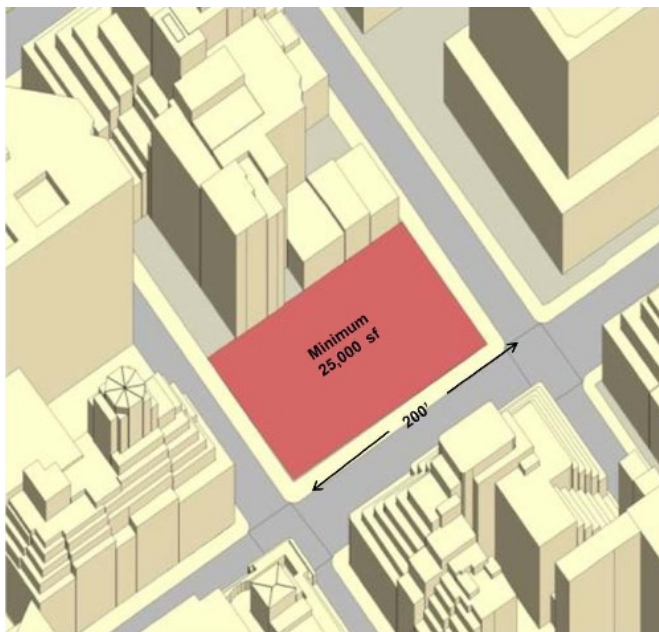


Figure 4.2.3.1.a - Qualifying Site Criteria (Left). Source: https://www1.nyc.gov/assets/planning/download/pdf/plans/east-midtown/earned_framework_25000.pdf

Figure 4.2.3.1.b - Earned as-of-right zoning framework for Qualifying Sites (Right). Source: https://www1.nyc.gov/assets/planning/download/pdf/plans/east-midtown/earned_framework.pdf

Eligible sites will have a base floor area ratio of 15.0. To acquire a higher floor area ratio than the current district, a District Improvement Bonus (DIB) of \$2,700/m² must first be paid to the District Improvement Fund (DIF). This payment is not required if the new development is based on a project on the DIF Board's priority improvement list. Developers could buy unused development rights from landmarks like Grand Central Terminal or continue contributing to the DIF in return for further building rights until the zoning's naturally permissible floor area ratio cap is met (see Figure 4.2.3.1.b). In addition to the original central zoning area, the proposal adds a northern zoning district to broaden the application of development rights transfer. Developers wanting to exceed the natural permit floor area ratio would have to complete a public review procedure to acquire a special permit. Depending on the location, such approved Superior Developments would have a maximum floor area ratio of 24.0 (Park Avenue zoning zone) or 30.0 (Central zoning district). (NYC Department of City Planning, 2013; Shen & Zhu, 2019).

Many opponents criticized Bloomberg's proposal. "The plan has stirred criticism from some urban planners, community boards, and City Council members, who have contended that the mayor has acted hastily. They said they were concerned about the impact of taller towers in an already dense district where buildings, public spaces, streets, sidewalks, and subways have long remained unchanged." (Bagli, 2012)

The City Council ultimately suspended the proposal in late 2013.

4.2.3.2 The rezoning proposal in 2017

The East Midtown Rezoning Plan was revived in May of that year in a two-phase process under the leadership of new Mayor Bill de Blasio, who took office in January 2014. The Vanderbilt Corridor's first phase of a five-block rezoning of Vanderbilt Avenue has been completed (see figure 4.2.3.2.a). The East Midtown Steering Committee directed the second stage of the rezoning project (Shen & Zhu, 2019).

The Vanderbilt Corridor is a more concentrated region to address the issues in East Midtown as the first stage of the rezoning project. To make it a significant engine of growth, the proposal establishes procedures for increasing density in exchange for

substantial enhancements to the public realm. It allows the transfer of more underused landmark development rights. For a maximum FAR of 30.0, sites within the corridor may apply for one or a combination of two special permits.

“One Vanderbilt Avenue went up under this new zoning framework -- a new 30 FAR, 1.3 million square foot commercial tower that got a special permit to increase its floor area in return for making approximately 225 million dollars worth of improvements to the Grand Central Terminal.”(*Greater East Midtown - DCP*, n.d.)

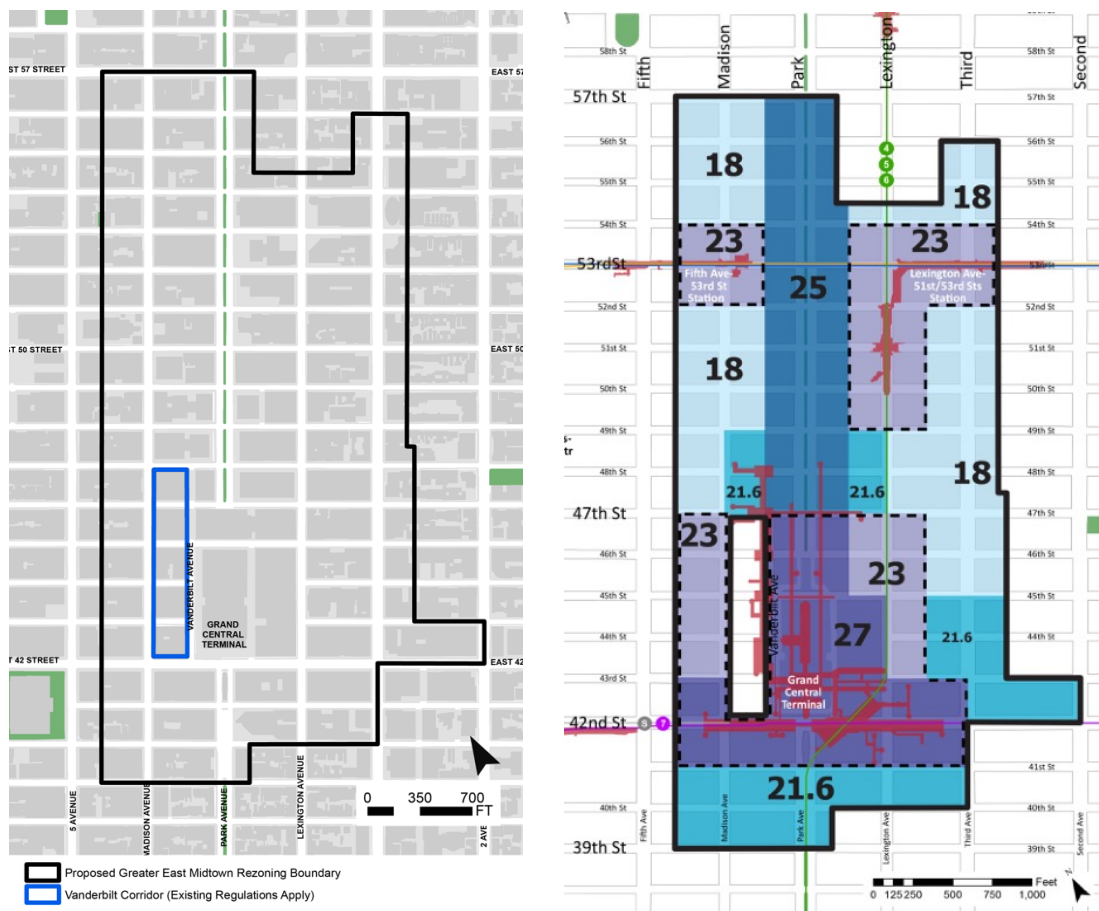


Figure 4.2.3.2.a - Proposed rezoning area (Left) (Department of City Planning, 2017a, p. 1)

Figure 4.2.3.2.b - 2017 Rezoning Floor Area Ratio (Right). Source: <https://www1.nyc.gov/assets/planning/download/pdf/plans-studies/greater-east-midtown/gem-far-density.pdf>

The Phase II proposal expands on Bloomberg's proposal to develop a new rezoning framework. The framework agreed to a natural permission zoning framework that encouraged higher density development, and it mainly followed the ideas of the

previous version of the proposal in this regard, with some changes to the natural permit framework (see figure 4.2.3.2.b)(*Greater East Midtown - DCP*, n.d.).

Non-office development is still limited to 20% in this version of the proposal, and hotel construction is more strictly limited to requiring a special permit. The rezoning boosted the estimated new office space to 610,000 square meters, with 12,000 square meters added for retail functions, adding 26,078 jobs to the area and substantially limiting residential growth (Shen & Zhu, 2019).

The City Council ultimately approved the proposal on August 9, 2017.

4.2.4 Iconic architecture ---- One Vanderbilt

One Vanderbilt is a 67-story supertall skyscraper in midtown Manhattan, New York City, located at the junction of 42nd Street and Vanderbilt Avenue, immediately west of Grand Central Terminal. It is the first building to be built as part of New York City's East Midtown rezoning, which Mayor de Blasio proposed in the early 2010s. It began development in 2016 and is scheduled to open in 2020. The 1.6 million-square-foot (150,000-square-meter) skyscraper features a 1,301-foot (397-meter) high roof and a 1,401-foot (427-meter) spire, making it the city's fourth-highest building.

One Vanderbilt offers 1.7 million square feet of Class-A office space, featuring column-free expanses and stunning views through floor-to-ceiling windows. A 30,000-square-foot amenity floor with outdoor garden terraces and world-class dining round out the building's offerings. One Vanderbilt is also the tallest office tower in Midtown Manhattan. It transforms the civic experience of the Grand Central district, layering its architectural language and skillfully meeting market demands for cutting-edge, contemporary office space (Tahir, 2021).

4.2.5 The implementation process

“At the outset of the design process, this connection to public transport was recognized to be one of the key attributes of the proposed tall building.” The land was assembled over a decade by the client, SL Green, the largest landlord of commercial real estate

in New York (Von Klemperer, 2015, p. 55). In the early 2000s, SL Green began looking for a site for a new office building in Midtown, and in 2011, SL Green purchased the last property on the block where One Vanderbilt is located. The maximum permissible "as-of-right" floor area ratio (FAR) for the site under the zoning standards at the time was 15. Still, with Bowery Savings Bank's air rights and various development bonuses, SL Green could get a floor area ratio of up to 20.7. However, this was insufficient for SL Green, who demanded a FAR of 30 for the skyscraper to be profitable. SL Green hired Kohn Pedersen Fox as the architect for the planned tower in 2012. The squared edges of the eventual solution fit well with the Manhattan grid context, including the Lincoln building across the street to the south, the street wall of Madison Avenue, and the body of the most significant tower in the neighborhood, the Chrysler building one block away to the east (Von Klemperer, 2015).

According to the above, Mayor Michael Bloomberg's administration made the rezoning proposal in 2013 to change the zoning regulations for 73 communities surrounding Grand Central Station. The concept called for the transfer of unused air rights above Grand Central Station to buildings in the surrounding communities, including the projected One Vanderbilt. Building developers in specific neighborhoods would have been able to deposit money into East Midtown's improvement fund in exchange for up to 24 FAR under the idea. One Vanderbilt would have received the required 30 FAR under the zoning restrictions (Alberts, 2013a; Dunlap, 2013; newyorkyimby, 2013). Following the failure of the rezoning proposal, Mark Holliday, CEO of SL Green, stated that he was unsure whether he would continue to develop One Vanderbilt (Alberts, 2013b; Bagli, 2013).

In 2014, the city resurrected the program of advancing East Midtown Zoning. The new De Blasio administration saw the One Vanderbilt project as a positive addition to their agenda despite a much scaled-back version concerning itself, specifically with the Vanderbilt corridor (Von Klemperer, 2015). SL Green officially resumed its plans for One Vanderbilt in May 2014. In September 2014, SL Green proposed traffic improvements near Grand Central Station in exchange for a further increase in FAR, which is the building's height. One Vanderbilt was anticipated to reach a height of 461m by October 2014. The Vanderbilt Avenue rezoning and SL Green's project for

One Vanderbilt were authorized by the DCP in March 2015 (Dailey, 2015; Schlanger & Pm, 2015).

On October 18th, 2016, One Vanderbilt officially hold a groundbreaking. The building topped out on September 17, 2019. In late 2019, SL Green announced that the building was expected to open the following August. The New York City Department of Buildings issued a temporary certificate of occupancy for One Vanderbilt on September 11, 2020. Three days later, on September 14, One Vanderbilt was formally opened with a ceremony (CBS New York, 2021; Davidson, 2021; Herzenberg, n.d.; O'Connell-Domenech, 2020).

4.2.6 The incorporation of the iconic building into the masterplan

The One Vanderbilt site is a complete, almost square block in the Vanderbilt Corridor and the heart of Midtown Manhattan. DCP proposed the Vanderbilt Corridor proposal to address the number of development sites along Vanderbilt Avenue that offer the opportunity to provide modern commercial space near Grand Central Terminal in the near term, to create a mechanism for linking new commercial development to significant infrastructure improvements in the overall Grand Central Terminal area, and to provide greater options for the transfer of unused landmark development rights. (Department of City Planning, 2015b). The One Vanderbilt Corridor and One Vanderbilt proposals are congruent with the primary objective of the Midtown East rezoning plan, which is to encourage the development of modern office space in the East Midtown neighborhood.

The East Midtown subdivision also attempts to address another issue in the East Midtown area: the need to improve traffic and pedestrian circulation, as well as the area's pedestrian and built environments, to make East Midtown a better place to work and visit. One Vanderbilt is situated above the loop of the current commuter train tracks, across from Grand Central Terminal, adjacent to the subway platform, and, most crucially, above the East Side Access platform. One Vanderbilt includes two floors below grade: the first contains a pedestrian circulation space that connects to the below-grade circulation space at Grand Central Terminal and leads to the new station

entrance on the first floor of the building at East 42nd Street (see figure 4.2.6.a). These measures alleviate pedestrian congestion within Grand Central Terminal.

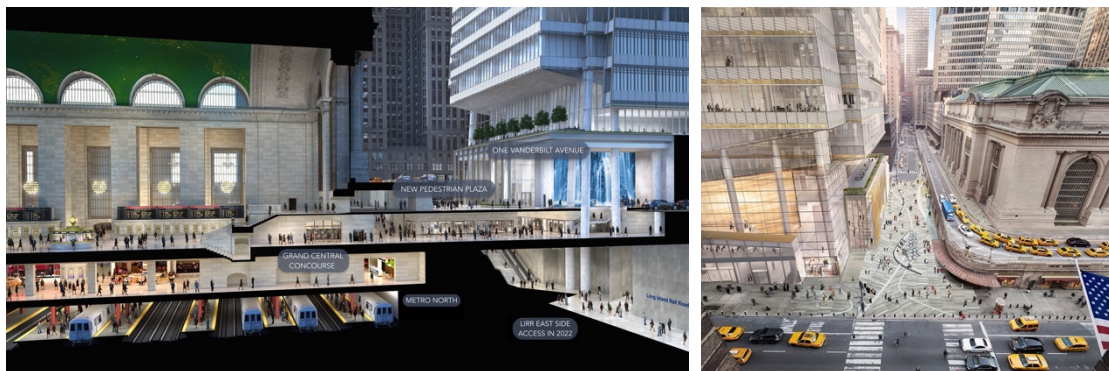


Figure 4.2.6. a - Cross-section shows the connection between One Vanderbilts and the Gand Central Terminal (Left). Source: <https://www.kpf.com/stories/one-vanderbilt>

Figure 4.2.6.b - View of the proposed public place on the east side of the building (Right). Source: <https://www.kpf.com/stories/one-vanderbilt>

In addition, as part of the One Vanderbilt development, the portion of Vanderbilt Avenue immediately to the east of the One Vanderbilt site (between East 42nd and East 43rd Streets) is closed to vehicular traffic except for emergency vehicles and designated as a public park (see figure 4.2.6.b). This gives the Department of Transportation about 12,820 square feet of pedestrian circulation space surrounding Grand Central Terminal. The public space is similar to other pedestrian plazas in high-traffic locations of Manhattan, such as the Pershing Square Plaza mentioned above. It contains amenities such as benches and lighting (Department of City Planning, 2015a).

4.2.7 Urban effects of the iconic building

From a transit perspective, the One Vanderbilt building has extensive links to the Grand Central Terminal pedestrian circulation network and the subway and East Side Access; these linkages reduce pedestrian congestion within Grand Central Terminal. One Vanderbilt is also an essential part of the transportation hub sequence, which is used every day by thousands of commuters. The building improves commuter access while also providing a direct path to the numerous transit amenities that will be located in Central Square in the future.

In terms of public space, the One Vanderbilt building combines private and public areas to create a distinct functional typology. The integrated underground facility provides direct access to the center area and a pedestrian plaza on Vanderbilt Avenue, covering 1,300 square meters.

Furthermore, the One Vanderbilt development strengthens East Midtown's role as a traditional commercial center while also achieving the citywide goal of boosting commercial growth in a well-served area by public transportation. The One Vanderbilt development includes rooftop amenity space with unique views of the city skyline and Midtown architectural landmarks such as the Chrysler Building, Grand Central Terminal, the New York Public Library, and the Empire State Building, strengthening the East Midtown area's status as a tourism spot. It is conservatively estimated that the observation deck will attract an average of 5,355 daily visitors, which includes a share of the existing tourist population in the area (i.e., visitors to one or more of the other current attractions in the area). For purposes of analysis, it is assumed that 3,588 visitors (roughly two-thirds of the average daily visitor population) would be new visitors to the study area, increasing its non-residential population. (Department of City Planning, n.d.)

4.2.8 Visual effects

Following the layered architectural language of neighboring New York City icons, One Vanderbilt joins the Chrysler Building and Empire State Building to define the city's renowned skyline. Formally, One Vanderbilt's massing comprises four interlocking and tapering volumes that spiral toward the sky, an elegant shape in sympathetic proportion to these iconic neighbors. (*KPF-Designed One Vanderbilt Opens in Midtown Manhattan by Kohn Pedersen Fox (KPF), 2020*)



Figure 4.2.9.a - One Vanderbilt redefining the skylight of Manhattan ©Max Touhey

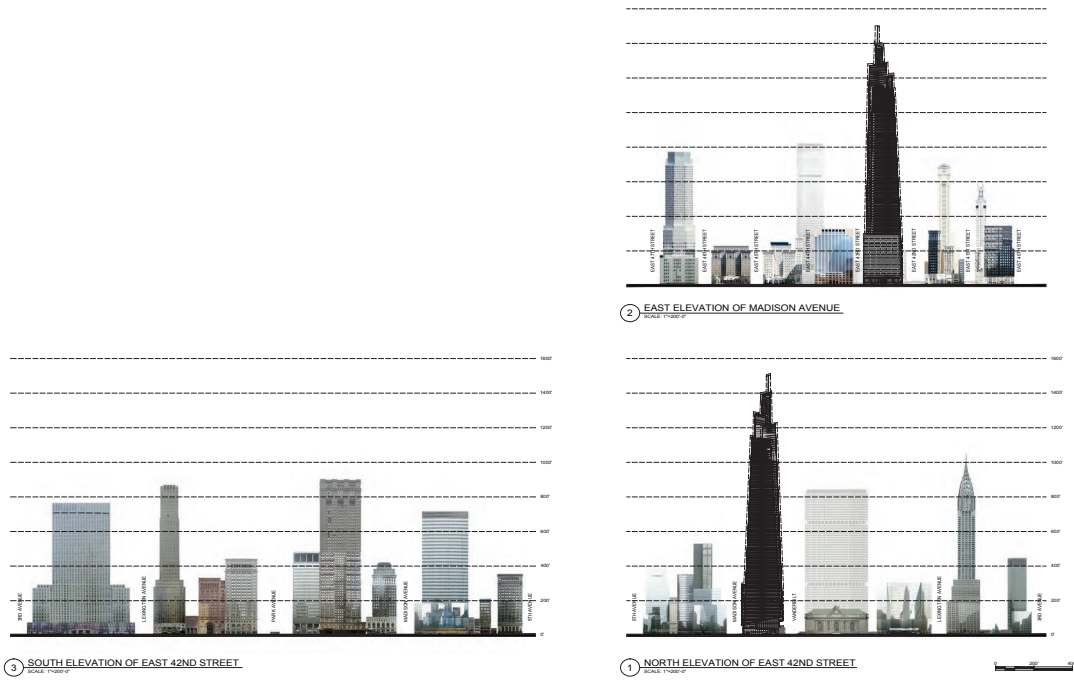


Figure 4.2.9.b - One Vanderbilt Contextual Elevations (Department of City Planning, 2015b).



Figure 4.2.9.c - View from the southwest. Source: <https://www.kpf.com/stories/one-vanderbilt>

4.3 International Commerce Centre and West Kowloon District, Hong Kong

HONG KONG	
City Area (Land):	1110.18 km ²
City Population (2021):	7,413,070
Population Density:	6,801/km ²
GDP (2020)	\$370 billion
WEST KOWLOON DISTRICT	
Site area (sqm)	830,000
GFA (sqm)	2,776,000
Density (FAR)	3.35
Residential	28.75%
Business (Office / Hotel)	38.65%
Commercial (Retail)	9.94%
Civic (Education, Arts, Culture Centre)	22.66%
INTERNATIONAL COMMERCE CENTRE	
Design firm:	Kohn Pedersen Fox
Owner:	Sun Hung Kai Properties Limited
Function:	Hotel Commercial Offices
Construction started:	2002
Opened:	2010
Budget:	\$3.85 billion
Height:	484 m
Gross floor area:	274,064 sqm
FAR:	-

Table 4.3 - Key information about the studying case (Source: census2021.gov.hk, 2021a, 2021b; CTBUH Skyscraper Center., n.d.; Emporis, n.d.; Glass Steel and Stone, 2015; International Monetary Fund, 2022; SkyscraperPage, n.d.; Structurae, n.d.; Sun Hung Kai Properties Limited, 2012; Survey and Mapping Office, 2021; Zhou & Choi, 2019, p. 151).

4.3.1 Location



Figure 4.3.1 – Location of West Kowloon and Kowloon within Hong Kong (Source: Mapbox, adapted by the author)

.4.3.1.1 Kowloon, Hong Kong

Kowloon is a district in the Hong Kong metropolitan area that includes the Kowloon Peninsula and New Kowloon. It is one of Hong Kong's three major regions, together with Hong Kong Island and the New Territories. Kowloon lies in the geographic center of Hong Kong, surrounded by the sea on three sides and separated from Hong Kong Island to the south by Victoria Harbour. It is the most populous area in Hong Kong,

compared with Hong Kong Island and the rest of the New Territories. The peninsula's area is about 47 km² (Lands Department, 2021).

.4.3.1.2 West Kowloon



Figure 4.3.1.2 – Location of West Kowloon (Mapbox, adapted by the author).

The majority of West Kowloon is made up of reclaimed land that was later built in the late 20th century. It sits above reclaimed land on the west side of the Kowloon Peninsula, facing the southern shore. It has practically doubled in size as part of a significant reclamation project as part of the Airport Core Programme in the 1990's period. It has been zoned for mixed commercial, residential, and leisure development since the West Kowloon Reclamation Project.

4.3.2 Historical background

Limited buildable land and a rapidly increasing population are the two most difficult urban development issues in Hong Kong. This fact is evident in the high-density and high-rise urban forms currently seen in Hong Kong's urbanized region, with reclamation being the most feasible and direct means to expand the amount of buildable land since the nineteenth-century (C. Q. L. Xue et al., 2010).

4.3.2.1 Hong Kong Airport Core Programme

The Rose Garden Project, a significant infrastructure development project for Hong Kong, includes the Hong Kong Airport Core Programme. The British Hong Kong Government unveiled the Rose Garden Project, a major port and airport development project, in late 1989 to strengthen Hong Kong's economy and regain public confidence over the long term. Ten significant projects comprise the Airport Core Programme, which has the new Hong Kong International Airport at Chek Lap Kok on Lantau Island as its focal point (Zhou & Choi, 2019). Reclamation on the west coast of the Kowloon peninsula and the Central waterfront on Hong Kong Island, in addition to the construction of the airport on Lantau Island and the bridges and highways leading to it, is a crucial part of the ACP for the construction of the underground Airport Express Line and the Mass Transit Railway (MTR) connecting Chek Lap Kok to the Central

CBD (Blake, 1994). This significant infrastructure has strengthened the status of Hong Kong as an aviation hub.

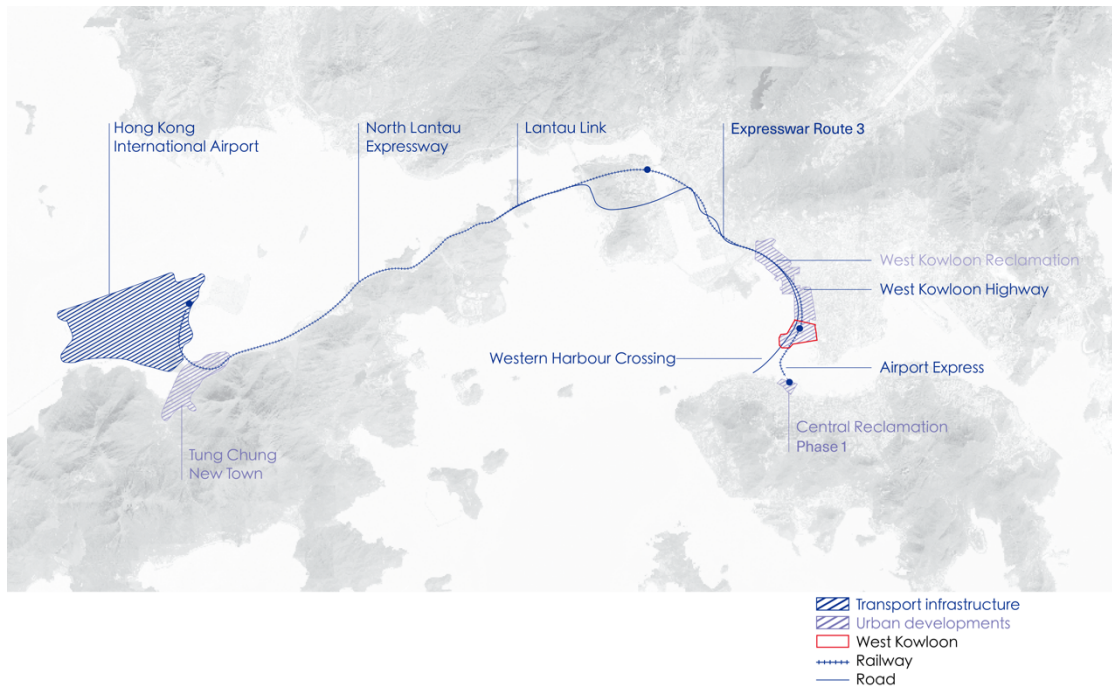


Figure 4.3.2.1 - The Airport Core Programme(ACP)'s projects. (Zhou & Choi, 2019, p. 165)

4.3.2.2 West Kowloon Reclamation Project

The largest reclamation project ever carried out in an urban environment; the West Kowloon Reclamation Project is a component of the Hong Kong Airport Core Programme. Since the early 20th century, Yau Tsim Mong District has been the most congested district in Hong Kong because it was the first area of Kowloon to be built. The city, in the center of the Kowloon Peninsula and encircled by Victoria Harbour, is experiencing significant traffic issues due to the area's increasing population, which has severely depleted the area's land resources. The immediate objective of the West Kowloon Reclamation Project is, therefore, to provide the land area needed for the expansion of the Yau Tsim Mong District (see figure 4.3.2.2). The development of this reclamation area has largely been led by the metro lines and, therefore, the distribution of stations. Kowloon Station was planned as an essential local node with a specific density and mixture. (C. Q. L. Xue et al., 2010).

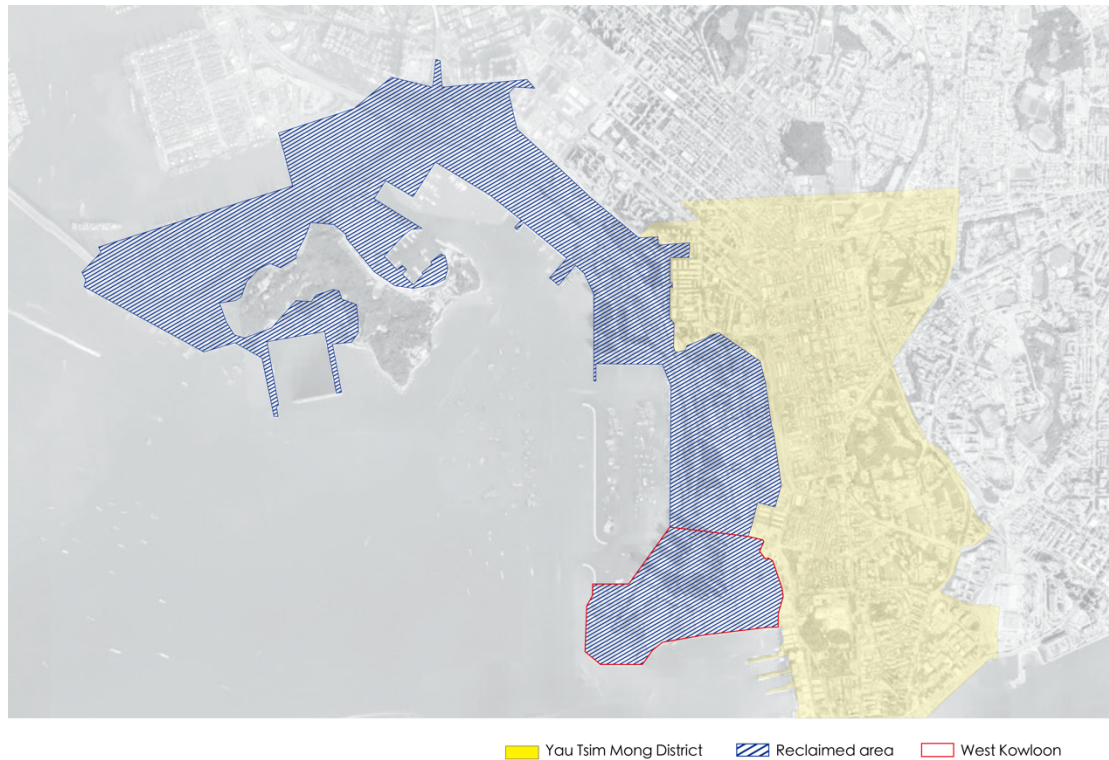


Figure 4.3.2.2 - West Kowloon reclamation. (Source: Zhou & Choi, 2019, p. 168, modified by the author)

4.3.2.3 West Kowloon Cultural District

The Planning Department's 1990 Metroplan Selected Strategy, the first territorial-scaled restructuring plan for Hong Kong, indicated only that the reclaimed areas would serve as mitigation and spill-over regions for Kowloon's high-density (Hong Kong Planning, Environment and Lands Branch. Strategic Planning Unit., 1989). In the West Kowloon Development Statement of 1994, which was to "translate the Metroplan concept into more specific district planning objectives and targets"(Li, 1994), existing usage patterns were extended along the reclaimed areas. Since Kowloon's southernmost commercial and tourism district was Tsim Sha Tsui (TST), its functions were also extended to the southern portion of West Kowloon Reclamation, which is now the West Kowloon Cultural District (WKCD), and to the Kowloon Point Reclamation, which no longer exists. The waterfront was defined as a continuous green in the development statement, bulging towards the southwest. Later, this first vague green would become the zoning plan for a southwest waterfront. (Zhou & Choi, 2019, p. 169). At the end of 1999, the Planning, Environment and Lands Bureau

announced a shift from developing the western 5.5-hectare part of West Kowloon with one large-scale performance venue to developing all of West Kowloon's 40 hectares as a "world-class integrated arts, cultural and entertainment district" (Planning, Environment and Lands Bureau, 1999, p. 1), which is known as the West Kowloon Cultural District.

4.3.2.4 Kowloon Station

Hong Kong's urban development has always had to contend with a pair of difficult problems, specifically the tension between a shortage of buildable land and an increasing population, which is also well reflected in the city's current high-density character and ultra-high-rise structures. The city's transportation system has difficulties due to ultra-high-density development. Good connections and interchanges between various forms of transportation are naturally required due to the limited area available for public transportation design; these connections and interchanges should ideally be integrated into public spaces and building interiors (C. Q. L. Xue et al., 2010).

The Mass Transit Railway Corporation (MTRC) purchased the property atop Kowloon Station in 1992 for the Airport Express Line and the brand-new Kowloon Station on the Tung Chung Line. Kowloon Station, the most significant stop on the Tung Chung Line, enhances the connection between the MTR and other modes of transportation. The goal of MTR is to construct a commercial arcade that houses offices, hotels, service facilities, and community amenities in addition to a massive transit hub (C. Q. L. Xue et al., 2010). It will be a self-sufficient, dense mini-city wholly separated from the traditional downtown of Kowloon City.

4.3.2.5 XRL Station

In 1994, the British Hong Kong government was considering plans for a regional rail to connect Hong Kong to Mainland China (Transport Branch, 1994). Due to the uncertainties of the Handover's effect on Hong Kong and the financial stagnation of the Asian Financial Crisis in 1997, these plans were ongoing. Following the Handover, the SAR government, through the Kowloon Canton Railway (KCR), commissioned TFP Farrells to study the area and make a proposal in 2002. In early 2004, the PRC

government also announced the Long and Mid-term Railway Network Plan and initiated the rapid development of the country's high-speed railway network. This again placed the Hong Kong-Shenzhen-Guangzhou railway connection on the discussion table (Zhou & Choi, 2019, p. 171). In 2007, following Chief Executive Donald Tsang's visit to Guangzhou, the Hong Kong SAR government announced ten major infrastructure projects, including constructing a new high-speed rail link to better connect Hong Kong with Mainland China (Zhou & Choi, 2019, p. 171). The terminus of the high-speed rail will be XRL Station in West Kowloon.

4.3.3 Masterplan and urban development process

West Kowloon is a massive urban megaproject divided into three main sections: the Kowloon Station, West Kowloon Cultural District, and Express Railway Link Station (XRL Station) (see figure 4.3.3). The three components of the development are connected by their shared monolithic scale and disconnection from the adjacent urban fabric (Zhou & Choi, 2019).

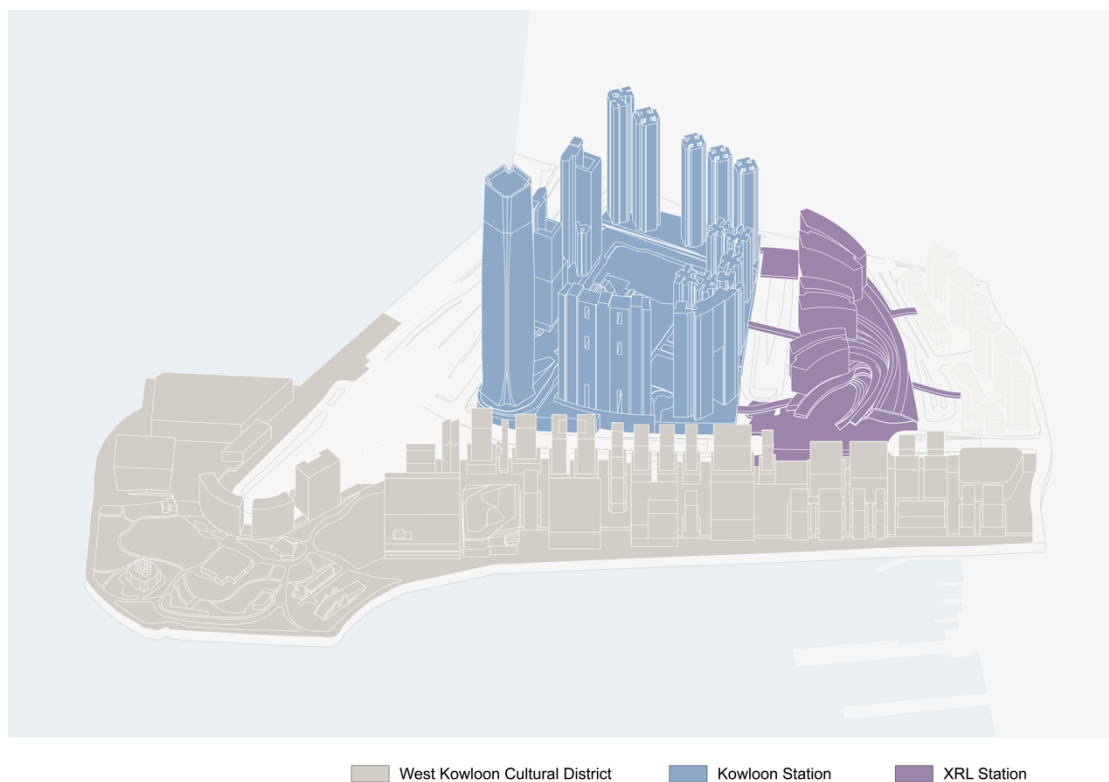


Figure 4.3.3 – The three major parts of West Kowloon. (Source: Zhou & Choi, 2019, p. 183, modified by the author)

4.3.3.1 Kowloon Station

In 1992, the Mass Transit Railway Corporation (MTRC) acquired the site atop Kowloon Station. It commissioned the British firm Terry Farrells and Partners (TFP) to develop a master plan for the station. When TFP started working on the station's and the area's master plan, they became aware that this was more than just a construction project; it also involved a complex transportation system that was multi-layered and three-dimensional, as well as a vision of the city as one enormous space (Tobin & Zhang, 2000). With a 12.4 plot ratio for 1.7 million square meters on 13.5 acres, TFP designers saw Kowloon Station as their opportunity to design a "Transport Super City" (Terry Farrell & Partners, 1998).

The Kowloon Station development, the first TOD building on land that had previously belonged to ACP, took up a sizable block. Its platform was a shopping center built over an Airport Express and subway station. At Kowloon Station, residential and commercial skyscrapers (ICC) are constructed over a podium of commercial facilities.

Kowloon Station is a self-sufficient urban unit consisting of 37% residences, 29% offices, 12% hotels, 6% retail, and 16% transport (Zhou & Choi, 2019, p. 185). In the West Kowloon design, the near-ground levels come together to form a podium, on top of which high-rise buildings with various uses are built. The ground floor and each underground level have access to public transportation, parking lots, and roads. The first and second levels of the pedestrian network are accessible from the transportation level, and pedestrian bridges at the base's edge connect them to the pedestrian network that encircles West Kowloon. The shopping center, plaza, and footbridge on the second level are other practical solutions for the out-of-town street level system. On the roof of the 18-meter podium, all high-rise towers are connected by a podium that is roughly equivalent to the ground level of a typical block, allowing for direct vehicular and pedestrian access to all high-rise buildings (Tobin & Zhang, 2000; C. Q. L. Xue et al., 2010). The plan also provides space for bridges connecting the Kowloon Station podium mall with the XRL station to the east and the West Kowloon Cultural District to the south.

The TFP designers iterated through many configurations for the functional allocation and standard format of the towers atop Kowloon Station's podium, highlighting their masterplan's adaptability in meeting market needs and related density requirements. The real estate-dominated economy of Hong Kong required a great deal of flexibility (Zhou & Choi, 2019, p. 174)

In 1994, TFP submitted a master layout plan to the Town Planning Board (TPB) for approval.

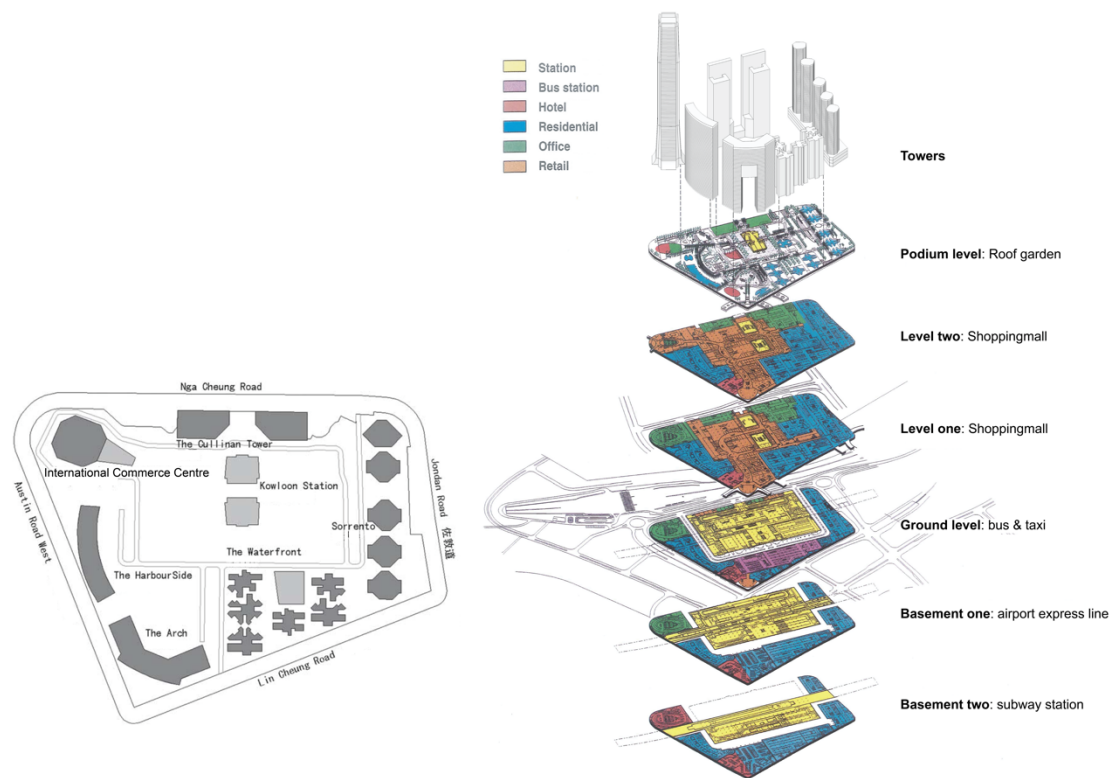


Figure 4.3.3.1 – The distribution of towers and the relationship between various floors in the Kowloon Station. (Source: C. Q. Xue & Sun, 2021, modified by the author)

4.3.3.2 West Kowloon Cultural District

In April 2001, the SAR government announced launching a Concept Plan Competition for the *Development of an Integrated Arts, Cultural, and Entertainment District at the West Kowloon Reclamation* (Planning and Lands Bureau, 2002, p. 1), proceeding with the idea of a Cultural District declared two years prior. The design competition attracted 161 entries from international firms, and in February 2002, Foster and Partners won

the competition. Foster designed a proposal for a streamlined continuous glass roof that spanned the entirety of the site, which covered and connected the various building clusters and became the blueprint for future designs (figure 4.3.3.2.a). This novel idea instantly became the focus of public attention in Hong Kong at the time, with mixed reviews (Liu, 2011; Zhou & Choi, 2019).

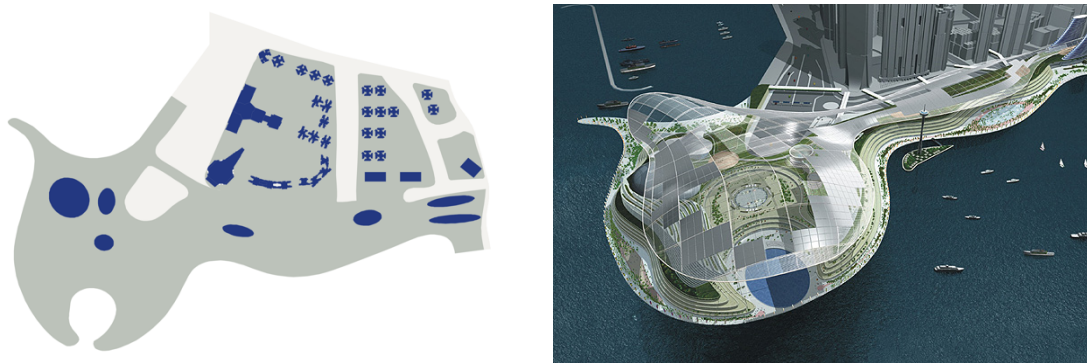


Figure 4.3.3.2.a – Norman Foster's Canopy proposal in 2001.

To carry out this plan, the Hong Kong government published an invitation for proposals in September 2002 for the development of the West Kowloon Cultural District (WKCD). Through an open tender, a sizable consortium was chosen to construct and manage the WKCD. Unexpectedly, this action sparked community outcry. According to opinion polls, more than half of Hong Kong residents believed that the canopy project was too expensive and that hygiene and safety were not assured (Liu, 2011).

An intense debate broke out when the Hong Kong government formally began a public consultation on the West Kowloon Cultural District (WKCD) proposal in 2003. The arts community criticized the WKCD for focusing too little on the growth and nurture of indigenous arts and instead just wanting to construct expansive entertainment facilities for foreign artists to perform in Hong Kong. The public and Legislative Council members questioned the intention to allow a consortium to administer the WKCD through a single contract, turning the WKCD into a luxury real estate project with the possibility of "benefit transfer." Thus, the WKCD's planning has been elevated to concerns of integrity, governance, democratic procedures, and the degree of democracy (Liu, 2011; Zhou & Choi, 2019). In February 2006, the WKCD project was

declared "overturned" in the face of serious questions from Hong Kong's various sectors.

The Hong Kong government established the West Kowloon Cultural District Authority (WKCDA) in 2007, yet the West Kowloon controversy remained. The impasse in the West Kowloon Cultural District dispute was not broken until July 2008. Finally, the SAR Government chose to relaunch the project with a HK\$21.6 billion injection of its finances, establishing the WKCD Authority to administer the project and its future operations. A new round of competitive bidding for the WKCD planning was initiated in December of the same year, and the final three shortlisted plans were announced in the Hong Kong media on April 7, 2009. Foster and Partners' proposal won again in 2011 after nearly a year of extensive consultation (Liu, 2011; Zhou & Choi, 2019).

Foster and Partners' "City Park" proposal preserves a massive park on the western side of the West Kowloon Cultural District, connecting to Kowloon Park in the east through the waterfront. Two rows of buildings function as cultural facilities on the north and south sides, each on a 100-130-meter-wide site. The vertical separation of automotive traffic and pedestrian access is a critical component of the concept, with the highway and parking lot sinking beneath the pedestrian link and park. The single roof has been replaced by a vast terrace that spans the new West Kowloon Cultural District (www.fosterandpartners.com, n.d.).

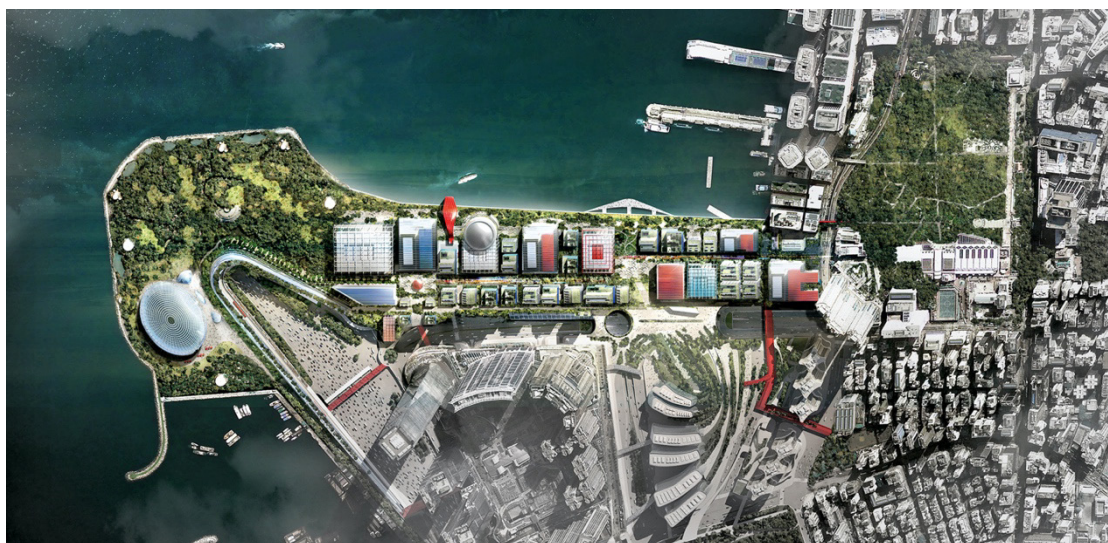


Figure 4.3.3.2.b – Mssterplan of Foster+Partners' proposal in 2011. (Source: <https://arquitecturaviva.com/works/plan-director-del-west-kowloon-cultural-district-9>)

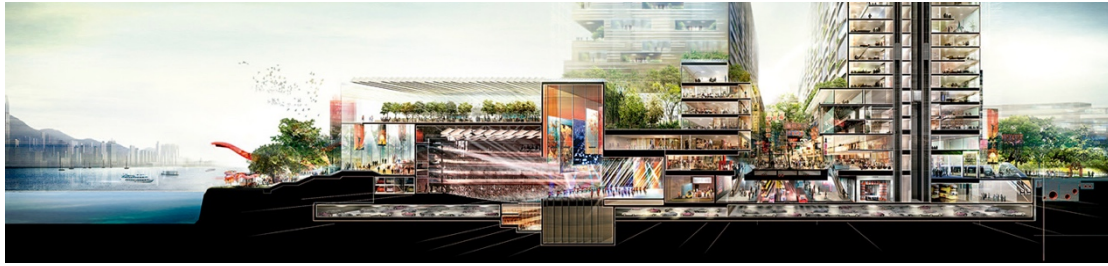


Figure 4.3.3.2.c – Cross-section view of Foster+Partners' proposal in 2011. (Source: <https://arquitecturaviva.com/works/plan-director-del-west-kowloon-cultural-district-9>)

4.3.3.3 XRL STATION

The design of the XRL began in 2007 as part of the development of the Ten Major Infrastructure Projects. After a private competition between TFP and Foster & Partners, the MTRC, which was commissioned to both design and build the infrastructure, awarded the design contract to the international architecture company Aedas in 2008. Aedas' Andrew Bromberg supervised the design, which includes a terminal station capped by a north-south wave-shaped roof that spans the entire mega-block. The roof is striated, partially occupied, and somewhat green, opening onto a planned plaza connecting to WKCD's Central Square and facing Victoria Harbour to the south (Figure 4.3.3.3.a). Aecom was tasked with designing the public area landscaping and the vital connection over the east-west Austin Road underpass into WKCD. Pedestrian bridges connect the two plots to the western side of Kowloon Station and traverse the north-south underpass (Zhou & Choi, 2019, p. 180).

Because the station's profile is low in proportion, especially compared to the lofty towers of Kowloon Station, 294,000 square meters of office towers were proposed atop the station on the western boundary. The 400,000-square-metre structure, 25 meters above ground at its highest points, is exceptionally complex due to its five-story underground infrastructure and the jurisdictional border between the SAR and PRC within its boundaries. The station's sizeable underground infrastructure requirements and link to the sea imply that it extends well below the WKCD, with implementation delays attributed to WKCD's delays (Zhou & Choi, 2019, p. 180).



Figure 4.3.3.3.a - Pedestrian ramp on roof connecting to the ground floor © Paul Warchol

4.3.4 Iconic architecture ---- International Commerce Centre

The International Commerce Centre is the seventh and final phase of the Kowloon Station Union Square development. It was built in 2002 and opened in 2010. The 118-story tower is 484m tall and was the sixth highest structure in the world when it was built.

The completion of ICC marks an essential milestone in the emergence of West Kowloon as a financial center for tackling the constraints created by a scarcity of office space in Hong Kong's conventional central business area, Central on Hong Kong Island. The skyscraper comprises Grade A office space on a large retail pedestal and the world's tallest hotel, the Ritz-Carlton Hong Kong, on floors 102 to 118. The ICC will become a vertical metropolis, with over 250,000 square meters of commercial space in this new center. KPF thoroughly examined the necessity of constructing the ICC as a driving force in the development of West Kowloon and the broader sustainable urban development of Hong Kong in its planning (KPF, n.d.; Wong Ouyang, n.d.).

4.3.5 The implementation process

The Hong Kong government granted the MTR Corporation land to build the TOD Kowloon Station in the early 1990s. The MTRC owns the transit hub and the open area that connects it. The initial phase of construction on the platform, according to TFP, the designer of the Kowloon Station, was the eastern cluster towers, and the second phase was the northern cluster. Initially slated for the third phase, the southeast corner had been allocated for service units (MTR Corporation, 2005; Zhou & Choi, 2019, p. 182). In 1998, the station opened. For the development of the podium mall, the MTRC formed a joint venture with the Hong Kong developer Sun Hung Kai Properties (SHK) and acquired a 99-year lease. (Zhou & Choi, 2019, p. 182)

During the final phase of the Kowloon Station development, Sun Hung Kai took advantage of the financial downturn of the late 1990s to push for a single tender for the cluster at the southwest corner of the Kowloon Station platform. This was also a site where the MTRC sold its 50–50 Shares with SHK to SHK, such that this is the only site with 100% SHK ownership (Zhou & Choi, 2019, pp. 182–185).

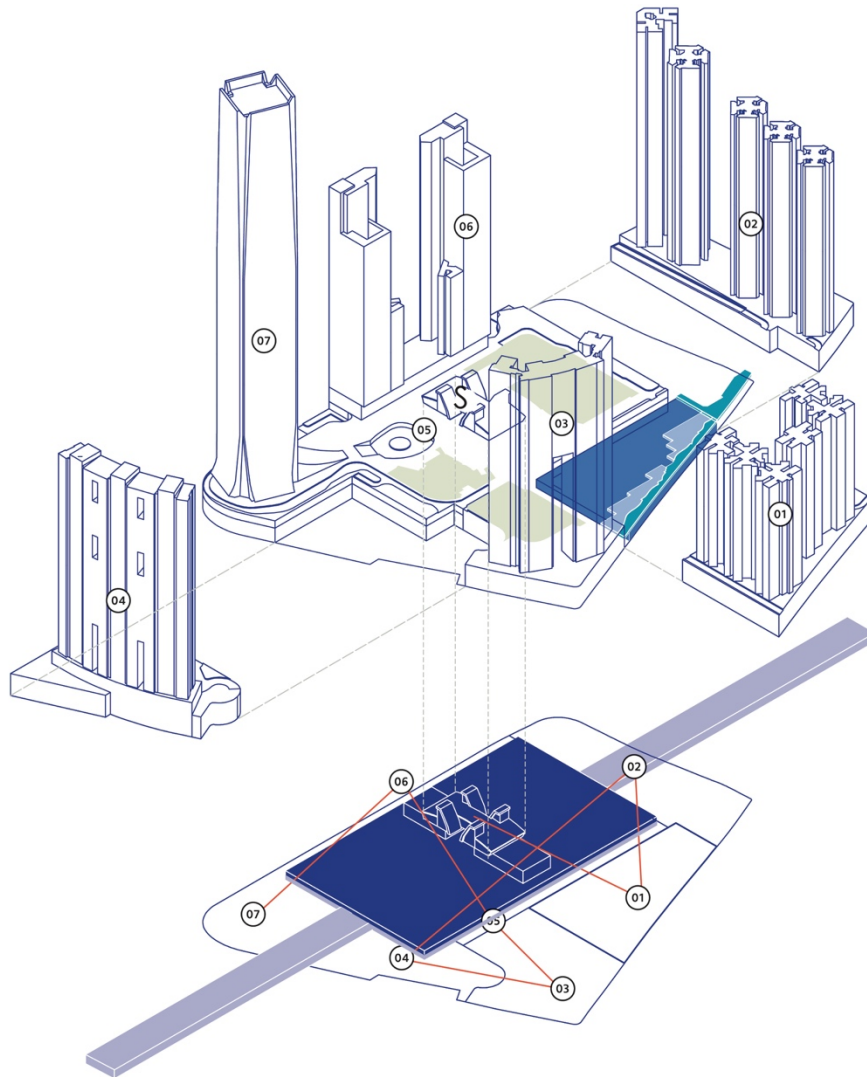
On October 30, 2000, MTR Corporation Limited and developer Sun Hung Kai Properties Development Limited held a signing ceremony for the Kowloon Station Phase 7 project. The developer announced intentions to build a cone-shaped skyscraper designed by SOM Architects with a height of 574 meters, breaking the record for the highest building in Hong Kong and, ideally, the world (Leslie E. Robertson Associates, 2004; Sun Hung Kai Properties Limited, 2012).

According to an Arup assessment, the concept developed by SOM Architects had structural issues, and the building and maintenance expenses were too high to be cost-effective. As a result, the developer, Sun Hung Kai Properties, reopened the tender for the building's design and suggested two fundamental principles: the building's technical feasibility and cost-effectiveness (CTBUH Skyscraper Center., n.d.; Emporis, n.d.; SkyscraperPage, n.d.).

KPF Architects bid on the final design in 2001, and the height was adjusted downward to 480m horizontal datum (i.e., the actual height of 474m). Subsequently, the developer,

Sun Hung Kai Properties, applied to the Town Planning Board in 2005 to increase the total size of the building from 480m horizontal datum to 490m horizontal datum (i.e., 484m actual height), which was eventually approved (Structurae, n.d.). The revised size would still allow it to be the tallest building in Hong Kong.

The developer purchased the entire project from the MTR in 2005 by pre-selling the unfinished apartments, and on September 29, the Kowloon Station Phase 7 project was officially named "International Commerce Centre." The International Commerce Centre's official ground-breaking ceremony took place on November 9, 2005, marking the official start of construction (Malott, 2010). The building was completed in 2010.



Funding	Ownership (Beginning)	Ownership (Built)	Implementation	Operation Management
→MTR Corporation →HKG Government →Private Developers	→MTR Corporation →Private Developers	→MTR Corporation →Private Owners	→MTR Corporation →Private Developers	→MTR Corporation

Developers of the buildings in Kowloon Station Development.

#	SITE	YEAR	USE	ENTITIES
01	The Waterfront	2001	Residential	MTR Corporation (SL) ; Wing Tai Asia(PL); Lai Sun Development(PL) World-wide Investment (PL); USI Holdings (PL); Temasek Holding(PF) Singapore Land (PF); Keppel Land (PF)
02	Sorrento	2003	Residential	MTR Corporation (SL); The Wharf Estate Development Ltd (PL)
03	The Arch	2005	Residential	MTR Corporation (SL); Sun Hung Kai Properties (PL)
04	The Harbourside	2003	Residential	MTR Corporation (SL); Hang Lung Properties (PL)
05	Elements Mall	2006	Retail	MTR Corporation (SL); Sun Hung Kai Properties (PL)
06	The Cullinan	2009	Residential / Hotel/ Service Apartments	MTR Corporation (SL); Sun Hung Kai Properties (PL)
07	International Commerce Centre	2011	Office	MTR Corporation (SL); Sun Hung Kai Properties(PL)
S	Kowloon Station	1998	Transport Hub	MTR Corporation(SL)

 Kowloon Station	(SL) Semi-public entity (local)
 Public bus terminus	(SF) Semi-public entity (foreign)
 Public programmes	(PL) Private entity (local)
 Public passage	(PF) Private entity (foreign)
 Public open space	
 Construction sequence	

Figure 4.3.5 – Developers and development process of Kowloon Station. (Source: Zhou & Choi, 2019, p. 183,186, modified by the author)

4.3.6 The incorporation of iconic architecture into the masterplan

The geographical location of the ICC is a primary key to its success in emerging as Hong Kong's latest financial hub (Tang, 2016). Sited above Kowloon Station, ICC is integrated with a public transportation infrastructure that carries 11 million passenger journeys per day (Hong Kong Special Administrative Region, 2021). With over 1 million square meters of floor space on 135,630 square meters of reclaimed land, the Kowloon Station development has been dubbed a "super transit city" (Malott, 2010). The ICC fits in well with its surroundings as one of the landmarks and most occupied buildings in the Kowloon Station development. The trailing curved shape of the building produces shaded canopies on three sides and a dramatic large, illuminated glass atrium on the north side. The atrium is visible for the remainder of the project. It serves as a public connecting space for retail and rail platform services, connecting the shopping arcade to the Airport Express/MTR station below (KPF, n.d.). The ICC is a synergistic blend of business, play, and leisure due to its proximity to West Kowloon. The West Kowloon Cultural District will revitalize the entire neighborhood by providing greenery and recreation space for ICC owners. The West Kowloon Cultural District will revive the whole site by adding grass and an area for ICC owners to relax.

The International Commerce Centre is intended to combine the extensive infrastructure surrounding it, allowing access to Hong Kong International Airport, Kowloon, across the harbor, and into mainland China (KPF, n.d.). This extensive transport network was further developed by introducing the Express Rail Link (XRL) in 2018. In 2018, the introduction of the Express Rail Link (XRL), connecting Hong Kong with the major cities in the Pearl River Delta, will transform the region into a transportation supercity of 120 million people, which will produce five percent of the world's manufactured goods and one-third of China's trade value (Malott, 2010). The high-speed rail terminal adjacent to the ICC transports 4.29 million passengers daily across one of the world's busiest borders (Hong Kong Special Administrative Region, 2021). The commute time from the ICC to Shenzhen's central business center has been lowered to 15 minutes, less than the commuting time between New York's downtown and midtown business districts (Malott, 2010). Principal James von Klemperer explains, "Office tenants in ICC in Hong Kong, Ping An in Shenzhen, and

CTF in Guangzhou can move from floor to floor, from tower to tower, from region to region, without leaving one continuous physical network.”(Malott, 2010, p. 14).

4.3.7 Urban effects of the iconic building

West Kowloon used to be mostly made up of old residential neighborhoods and typhoon shelters (Tang, 2016). From the previous typhoon shelter until today, the ICC has extended Hong Kong Island's current core financial area from Central to West Kowloon, elevating the economic and commercial significance of West Kowloon and even Kowloon.

Today, 90% of the office space is leased to world-class banks and financial institutions (Tang, 2016). This has alleviated the lack of office space in the Central CBD and relieved the pressure of tight commercial office space.

“ICC is not just the tallest landmark in Hong Kong but also a financial powerhouse. It is essentially a vertical Wall Street in Asia.” (Tang, 2016, p. 511). The emergence of the ICC has undoubtedly strengthened Hong Kong's position as one of the world's leading financial centers.

The Regional Express Link and the West Kowloon (XRL) Terminal were finished in 2018, making the journey to mainland China only 14 minutes by train. The ICC's function as a gateway to Hong Kong has been expanded. With China's predicted continuous economic expansion, the ICC location is a suitable regional headquarters for international corporations looking to extend their operations in the Eastern world, particularly in China (Tang, 2016).

4.3.8 Visual effects

For a long time, the urban imagery of Hong Kong Island's waterfront high-rise complex has been representative of the Asian metropolis. Still, north of Victoria Harbour, there has been no comparable cityscape due to the height restrictions of the original Kai Tak Airport in the city center of Kowloon (C. Q. L. Xue et al., 2010).

The new skyline formed by the ICC and the high rise of Kowloon Station has undoubtedly changed this situation.



Figure 4.3.8.a – View from south. (Source: <https://www.arup.com/projects/international-commerce-center-hong-kong>)



Figure 4.3.8.b – View from Victoria Peak facing the north. (Source: <https://www.arup.com/projects/international-commerce-center-hong-kong>)



Figure 4.3.8.c - ICC and International Finance Centre on the opposite shore have formed a stunning gateway across the Victoria Harbour. (Source: <https://www.arup.com/projects/international-commerce-center-hong-kong>)

4.4 Shanghai World Finance Center and Lujiazui Financial Central District, Shanghai

SHANGHAI	
City Area (Land):	6340.50 km ²
City Population:	24,894,300
Population Density:	3,854/km ²
GDP (2020)	\$680 billion
LUIJIAZUI FINANCIAL CENTER DISTRICT	
Site area (sqm)	1,800,000
GFA (sqm)	7,225,000
Density (FAR)	4.01
Residential	5.00%
Business (Office / Hotel)	64.00%
Commercial (Retail)	13.00%
Civic (Education, Arts, Culture Centre)	17.00%
SHANGHAI WORLD FINANCIAL CENTER	
Design firm:	Kohn Pedersen Fox
Owner:	Mori Building Co.
Function:	Mixed-use (office, retail, hotel, museum)
Construction started:	1997
Opened:	2008
Budget:	\$2.19 billion
Height:	492 m
Gross floor area:	381,600 sqm
FAR:	12.7

Table 4.4 - Key information about the studying case (Source: Katz & Robertson, 2008; Mori Building Co., n.d.; National Bureau of Statistics of China, 2021; Shanghai Municipal People's Government, 2011, 2022; Zhou, 2019, p. 107).

4.4.1 Location

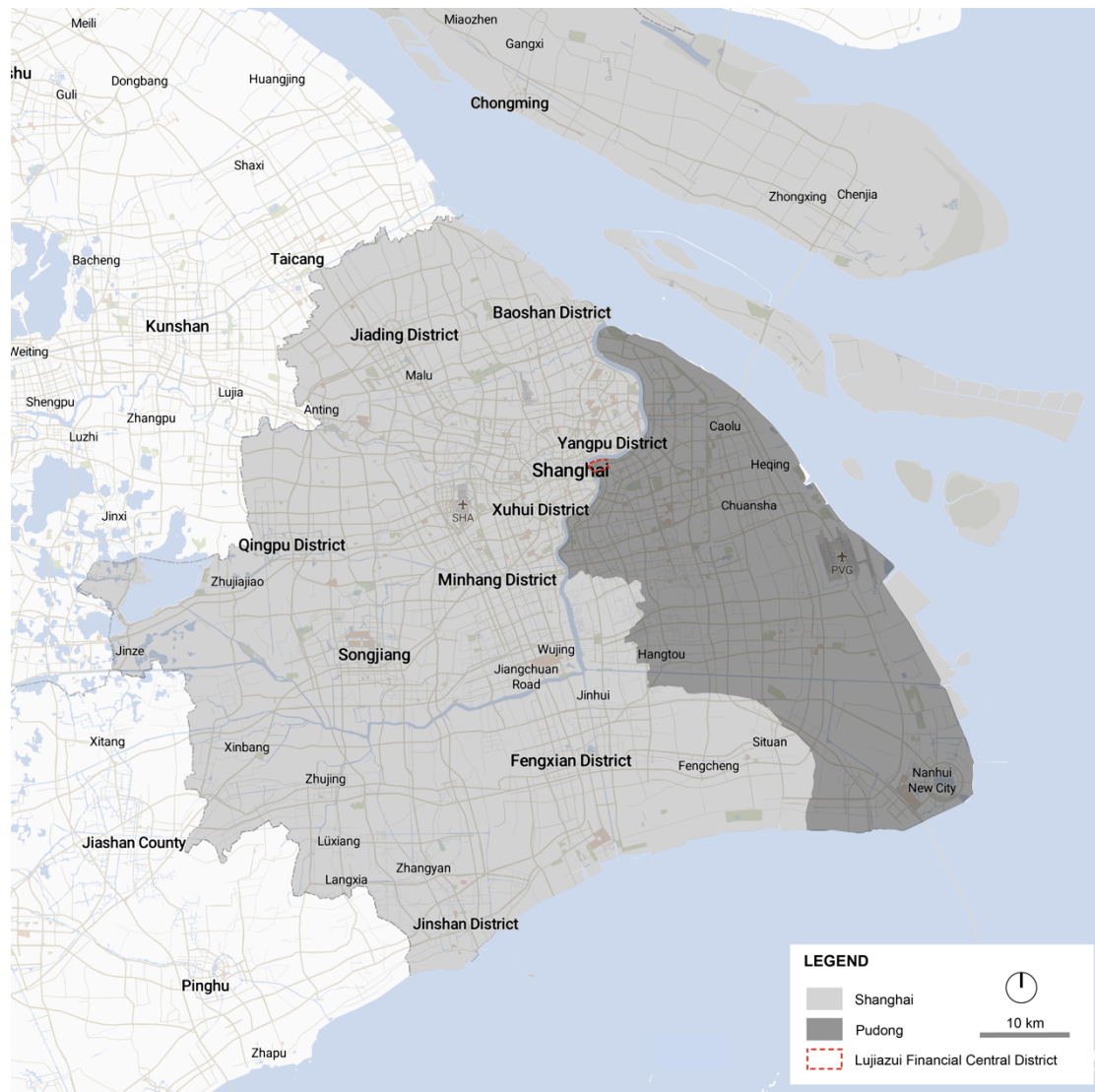


Figure 4.4.1 – Location of West Kowloon and Kowloon within Hong Kong (Source: Mapbox, adapted by the author)

4.4.1.1 Pudong, Shanghai

East of the Huangpu River and across the Huangpu from Puxi, the city's historic core, is where you'll find Shanghai's Pudong neighborhood. The name alludes to its former status as the Huangpu River's "eastern bank," which runs through Shanghai's heart and out to the East China Sea. The Shanghai Stock Exchange, the Lujiazui Financial and Trade Zone, and several of Shanghai's most recognized structures, including the

Oriental Pearl Tower, the Jin Mao Tower, the Shanghai World Financial Center, and the Shanghai Tower, are now located in the city's old Pudong neighborhood.

There are 1,210 square kilometers in the Pudong area. Data from the seventh census indicate that 5,681,512 people called Pudong New Area home as of November 2021 (*Population Analysis of Pudong, 2021*). Pudong New Area's GDP for the year is 127.34 billion RMB (China Statistical Office, 2021). Shanghai's Pudong New Area serves as a critical transportation hub and cutting-edge global logistics port. Aviation, railroads, and interstate highways create a trinity of marine, land, and air transportation systems.

4.4.1.2 Lujiazui Financial Central District



Lujiazui is a peninsula in the middle of Shanghai on the east bank of the Huangpu River in the Pudong New Area. Since the early 1990s, Lujiazui has been developed as a new financial district in Shanghai, the core functional region of Shanghai's international financial hub, and the home of major multinational businesses' Chinese and East Asian headquarters. The significance of Lujiazui originates from its location

across the river from the Bund, Shanghai's old financial and commercial center, on the south side of the junction of the Suzhou and Huangpu rivers (C. Q. L. Xue et al., 2011).

4.4.2 Historical background

Pudong, "the east bank of the Huangpu River," formerly referred to the old section of Shanghai and the undeveloped region across the Outer Concession. The area was primarily agricultural and took a long time to develop, with warehouses and wharves along its beaches.

Between the 1850s and 1949, Shanghai became a central global trade hub, the "modern gateway" to China, accounting for half of the country's GDP (Chen, 2009). After 1949, the PRC steadily closed China to global capital, information, and people flows. China became a centrally directed command economy. In the late 1970s, China again re-opened itself to the world and began to take on a market economy. Because of Shanghai's importance to China's economy, the central government hesitated to open Shanghai from under its central planning. (Zhou, 2019, p. 121)

The Lujiazui Planning Working Group began researching the Shanghai Central Business District in 1978. The early studies for developing the Pudong area and its potential were shown in the 1982 plan. The Shanghai Comprehensive Plan of 1984 includes a proposal to construct a new airport in the eastern part of Pudong. The Shanghai Municipal Government presented the "Shanghai Strategic Growth Development Plan" to the central government in mid-1984, seeking that Pudong be designated as a new economic development zone with tax and regulatory incentives to attract investment. The central government approved fiscal decentralization in the mid-1980s, providing the Shanghai government with unprecedented financial autonomy for much-needed infrastructure development. The Lujiazui Central Region Plan of February 1988 designated this 1.7 square kilometer area as an extension of the Bund across the river (Cao, 2020)

4.4.3 Masterplan and urban development process

In 1988, the Shanghai Municipal Government submitted the initial plan for the Lujiazui Center Section to the central government, confirming the 1.7 square kilometers main area of Lujiazui as part of Shanghai's new Central Business District. Shanghai Mayor Zhu Rongji announced an international competition for the urban design of the Lujiazui Financial District in April 1991, and a global consultation meeting on the planning and urban design of Shanghai's Lujiazui Central Area opened on November 20, 1992, at the Shanghai International Trade Center.

Generally, the foreign architecture firms chosen and invited by the organizers share similar features. They are all leading architects with exceptional ability to generate architectural concepts, and their work can be found worldwide, particularly in Europe and Japan. These firms' works are mostly limited to smaller-scale architectural and urban design, as is customary in wealthy countries. It is worth noting that all of the chosen personalities have backgrounds in architecture rather than planning. Typically, projects of this magnitude are reserved for professional planning firms only (C. Q. L. Xue et al., 2011). Another commonality is that these companies have not done projects in Shanghai or anywhere in China. The lack of knowledge of Shanghai and China limited their understanding of the actual site and social context. Because of this "deficiency," all of the proposals submitted had a strong tendency to form an ideal city with little consideration of the current situation in Lujiazui (C. Q. L. Xue et al., 2011).

The proposal by architect Richard Rogers was the most popular of the invited submissions. The scheme's core concept is a perfect circle in the middle of the Lujiazui site, with six radial roads radiating from the circle's center and stretching toward the center, connecting the new center to the rest of Pudong. The building blocks are circular in shape, with the towers rising in height from the exterior to the core (C. Q. L. Xue et al., 2011).

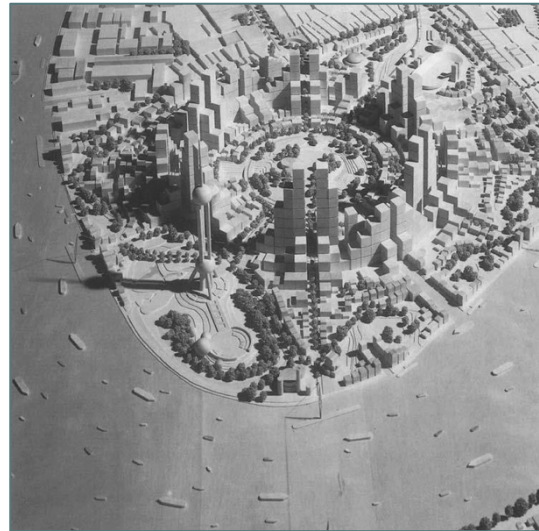
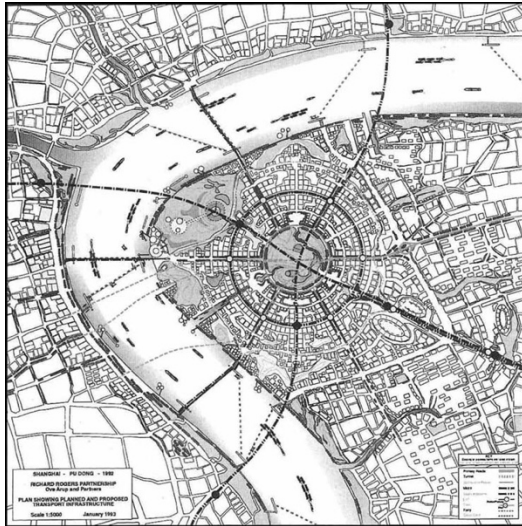


Figure 4.4.3.a - Rogers' Scheme. (Source: Xue, 2011)

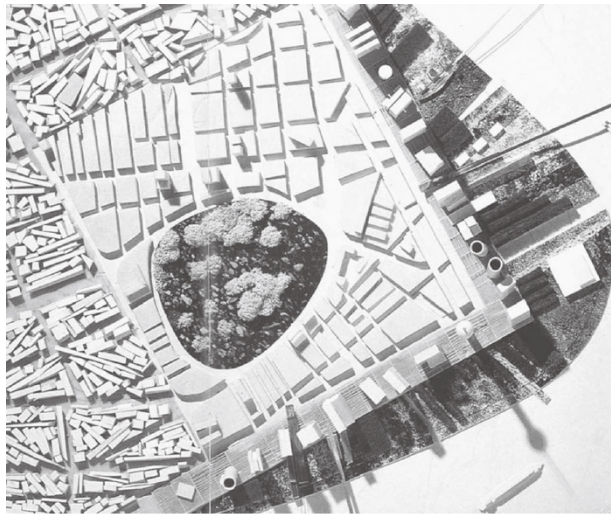
The other programs were less favored than Rogers', and they had little impact on the final program (Cao, 2020).

The idea of French architect Dominique Perrault was to create a new, dramatic picture of the future city, with a spatial pattern consisting of a right-angled interface toward the Bund that symbolizes the future and contrasts sharply with the architectural interface of the Bund in the twentieth century.

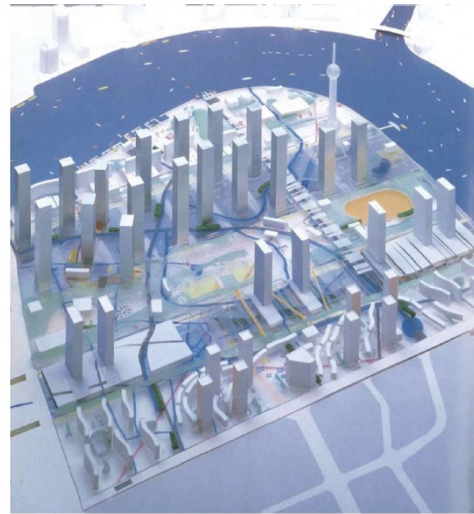
Toyo Ito's proposal aims to create a highly unified informational city with a tight band of functional layers horizontally and vertically so that the development axis develops in parallel along the Huangpu River's north-south strip, with a strong information flow, a rigorous urban network, and multiple layers of underground development.

Fuksas, an Italian architect, proposed to consider regional cultural links in the shape of South Shanghai's old city, resulting in an elliptical, high-density "city inside a city" surrounded by a cluster of low-rise structures.

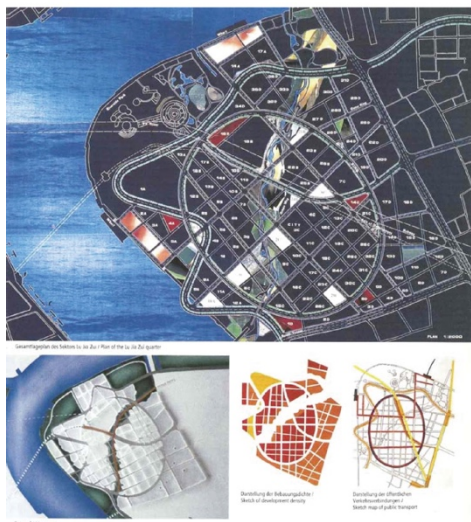
Shanghai Urban Planning Design Institute's proposal: The "East-West Axis" is essential to the city's development. The core region is clustered around a network of elevated pedestrian platforms and connected to a pedestrian green belt along the river.



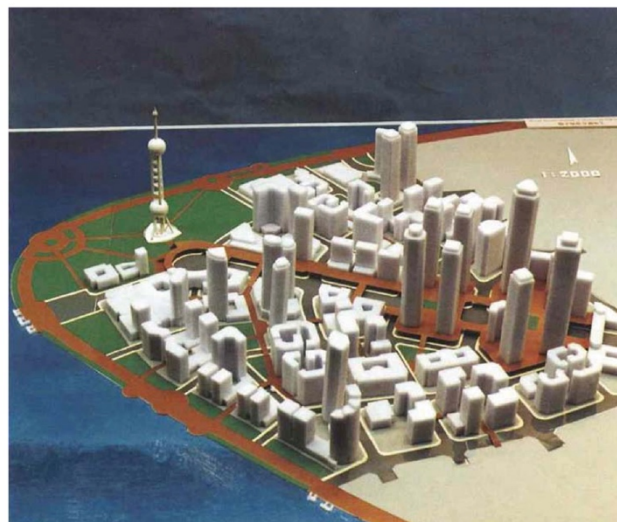
Dominique Perrault Schemes.



Toyo Ito Schemes



Massimiliano Fuksas Schemes



Shanghai Planners' Scheme

Figure 4.4.3.b – Schemes by Dominique Perrault, Toyo Ito, Massimiliano Fuksas, and Shanghai Urban Planning Design Institute. (Source: Xue, 2011, modified by the author)

These schemes are based on various interpretations of the Lujiazui financial district. As a result, they express themselves in multiple layouts and architectural expressions, which play a secondary role in the subsequent phase. All concepts, in general, begin with introducing a somewhat self-regulating order of urban form, with weak ties between Lujiazui and the rest of Pudong (C. Q. L. Xue et al., 2011).

The Shanghai Municipal Government proposed drawing on the five proposals' strengths and focusing on the "three combinations," i.e., the combination of China and foreign countries, the combination of Pudong and Puxi, the combination of history and the future (Cao, 2020).

The Shanghai Urban Planning Bureau and the newly formed Pudong New Area Management Committee arranged a design development based on design concepts submitted by five teams in early 1993. Following extensive consultation with domestic and international experts, the general principle of deepening the planning of the Lujiazui central area was to focus on the Shanghai scheme, with the Rogers scheme as the powerful combination of techniques to be absorbed while absorbing the benefits of other schemes. In terms of spatial architecture, practically all ideas incorporate high-rise clusters next to the core green or central axis, echoing the proven "Oriental Pearl" (Cao, 2020; Zhou, 2019).



Figure 4.3.3.c - SUPDRI Scheme after modification. (Source: Shanghai Urban Planning and Design Research Institute.)

The Shanghai Municipal Government granted preliminary approval in December 1993 to the planning and design plan for the center portion of Shanghai's Lujiazui district.

The primary area of the Lujiazui financial and trade district's urban design framework was established.

The central part of the Pudong Lujiazui Financial and Trade Zone was planned and designed with international consultation, creating a precedent in Chinese urban planning history (Cao, 2020).

4.4.4 Iconic architecture ---- Shanghai World Financial Center

The Shanghai World Financial Center (SWFC) is 492 meters tall and has 101 stories above ground and three floors below ground in the Lujiazui Financial Center. The Shanghai World Financial Center's shape and structure are inspired by the concept of "fusion of heaven and earth," with the tower "interpreted" as a link between heaven and earth. The Shanghai World Financial Center's primary body is a square column formed by two massive arched inclines that gradually shorten upward to meet at the summit, with square prisms and enormous arcs intersecting to emphasize the building's vertical height. The structure's functional elements are office buildings, hotels, and observation halls. The World Financial Center's 94th, 97th, and 100th floors are observation halls; the observation sky bridge on the 97th floor is 439 meters high, a floating sky bridge; and the observation sky pavilion on the 100th floor, at 474 meters, is a suspended observation promenade of about 55 meters long, with three transparent glass floors inside.

The World Tall Building and Urban Habitat Institute awarded Shanghai World Financial Center the "Best Tall Building of the Year" in 2008. The Shanghai World Financial Center received the "16th Global Tall Building Award of Special Award of the Decade" in 2018.

4.4.5 The implementation process

The Pudong district of Shanghai was designated as a reform and opening area in 1990. A brand-new urban development, the Puxi district, began there, across the river from the city's historic center. Researchers have found clever parallels between the timing of the construction of Lujiazui's three tallest towers and the onset of the Asian financial

crisis in 1997 and the world financial crisis in 2008 (see figure 4.4.5) (Zhou, 2019). These three buildings are the Jinmao Tower (built in 1998), the SWFC, and the Shanghai Center (construction began in 2008). Scholars therefore argued that the 1997 Asian Financial Crisis and the 2008 World Financial Crisis affected the implementation of the buildings, as well as their subsequent operation. (Zhou, 2019). The SWFC was built in the interim between the two financial crises, and the duration of its construction highlights the effects of both the 1997 and 2008 financial crises.

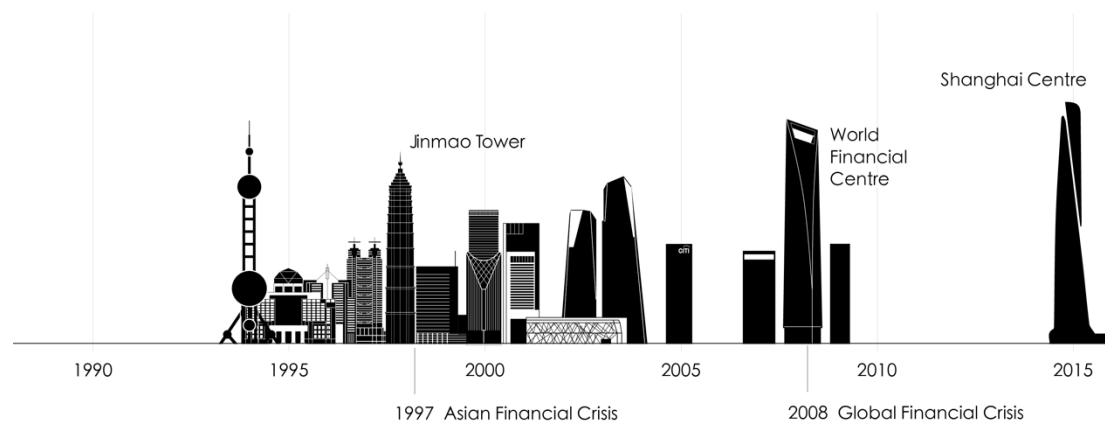


Figure 4.4.5 – Implementation process of Lujiazui's Towers. (Source: Zhou, 2019, modified by the author)

Minoru Mori, the president of Mori Building Co. (then executive managing director), visited China for the first time in 1992. He felt that Shanghai had more vitality than Beijing and that the whole city was full of excitement. It was full of lively energy attempting to achieve economic development in places with nothing. "The economy is developing on a blank slate, and there is energy and excitement everywhere." (Mori Building Co., n.d.) With an eye on the expansion plans for the Pudong area, Mori Building Co. started investigating the Shanghai market in 1993 and offered to construct a business tower in line with the financial center. The Shanghai World Financial Center, designated as the tallest skyscraper in Lujiazui and Asia, was one of two sites in Lujiazui for which Mori Building signed leases in November of that year (Zhou, 2019).

Early in 1997, the Shanghai World Financial Center's construction officially started, but the Asian financial crisis of the same year forced a halt. The Japanese side modified the Shanghai World Financial Center's original design to win the title of "World's Tallest

Building," with the design height changed from 466 meters to 492 meters. However, as skyscrapers in Taipei and Hong Kong exceeded the Shanghai World Financial Center's original design height, the tower's construction did not resume until 2003 (Wu, 2005; Zhou, 2019).

Shanghai World Financial Center (SWFC) announced its finalized design in October 2005, replacing the building's original circular cavity at the top with an inverted trapezoid. On November 16, 2008, SWFC's construction officially began, and SWFC was completed on August 29, 2008.

4.4.6 The incorporation of iconic architecture into the masterplan

The Shanghai World Financial Center (SWFC) is located in the Pudong New Area's Lujiazui International Financial and Trade Center. The 88-story Jinmao Tower and the 632-meter Shanghai Center Tower form a three-pronged structure to maximize its excellent environmental conditions. SWFC is located next to Century Avenue North, 100 meters wide, and overlooks the 100,000-square-meter Lujiazui Central Green Space. The site's east and south sides are conserved per urban planning standards so that the prevailing southeastern wind of Shanghai can be purified and blown to the site by this green zone.

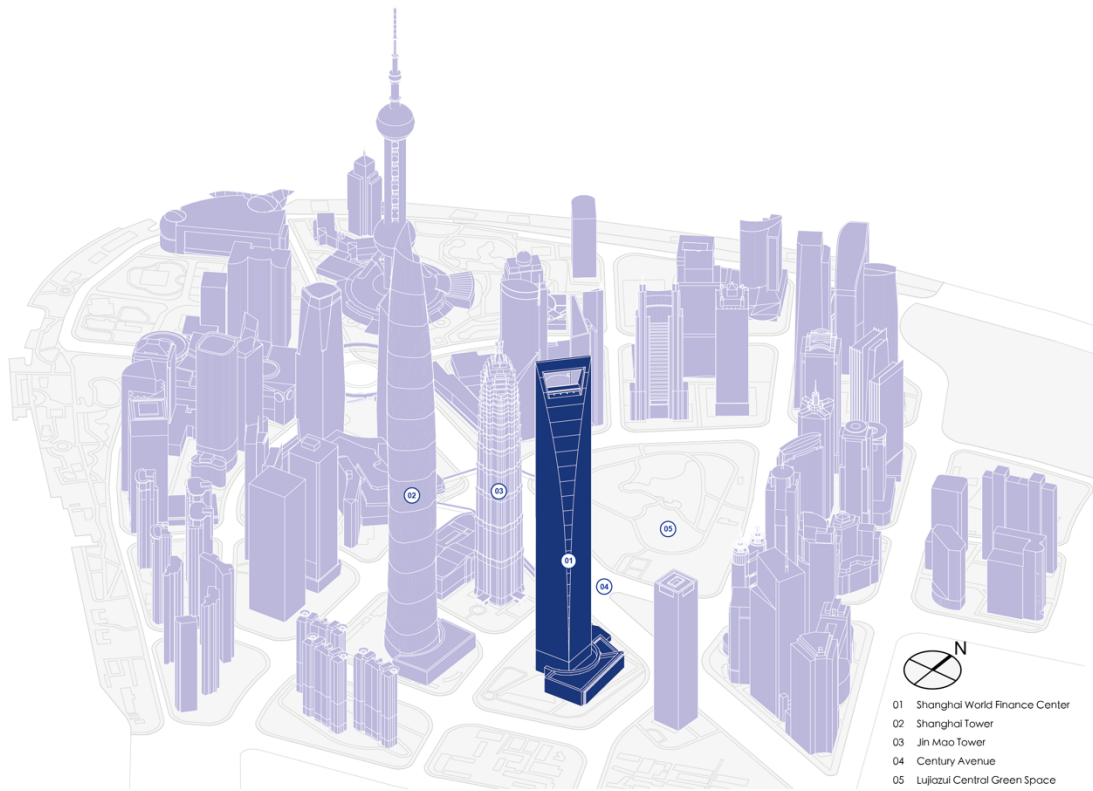


Figure 4.4.6.a – Axonometric view of Lujiazui. (Source: Zhou, 2009, modified by the author)

The building is designed in the center of the base, with a 25-meter setback on the north side to ensure a large public area in the northwest. To maintain the spatial equilibrium between the building and Jinmao Tower, open green space is created on the west side of the base. The public green space on the east and south sides is connected to the vegetation at the base. To ensure pedestrian safety, the road is centered in the northeast and southwest of the ground. At the same time, the northwest is used as an open space for pedestrians, with separate entrances and exits for offices, hotels, retailers, and tourism facilities, depending on their purpose. Furthermore, automobiles approaching the base from nearby roads will be segregated from pedestrians utilizing the subway (Dang & Yi, 2009).

The podium is envisioned as an extension of the surrounding park and serves as a transition from the tower to the adjacent park and boulevard. The pedestrian movement of the commercial facilities and the park is linked by the podium part and the radial pedestrian bridge that extends southeastward. The luminous pond and green area on the west side of the building, grouped in concentric rings, are connected to the park by

sloping slopes on the east and south sides of the structure, establishing a buffer zone between the park and the building, according to the geometry of the building. The podium's shell is a gently sloping wall rising from the flora. To blend harmoniously with the façade, the south and west walls adjacent to the park are encased in natural stone. At the same time, the frontage along Century Boulevard on the north side is transparent glass, establishing a conversation between the street and the inner mall (Dang & Yi, 2009).

4.4.7 Urban effects of the iconic building

The Shanghai World Financial Center is effectively a vertical city within a city, with an average daily footfall of over 20,000 people: a combination of office, hotel, retail, observation, media, conference, and public functions, all arranged vertically in sequence. The Shanghai World Financial Center's high-density design is made possible by incorporating a pedestrian network that extends from the tower base to Shanghai's public transportation system (Malott, 2009). The high-density design shortens commuting and prevents urban sprawl, protecting precious land. People can live, work, and play in the same neighborhood. Vertical complexes can accommodate these urban lifestyles by incorporating a density that significantly improves accessibility.

SWFC has evolved into a gathering place for individuals from all over the world to enjoy and share information, knowledge, and culture, as well as a location to explore new business prospects. The high concentration of high-quality business buildings in Lujiazui attracts a vast number of people, logistics, capital, and information flows, resulting in a significant "gathering effect."

The World Financial Center's 7th to 77th floors are office buildings with a total space of 226,900 square meters. The emergence of such an ample supply has altered the entire office scene in Lujiazui, Pudong. The Shanghai office market was chronically undersupplied in the years preceding the completion of SWFC. Around 2008, 900,000 square meters of Grade A office space were made available in the core area of Lujiazui (Wu, 2005), which was directly generated by the completion of SWFC, forcing not only Pudong's office market to immediately reverse the undersupply situation, but also

Shanghai's office market to enter a new round of digestion. According to Jones Lang LaSalle China's report, the pattern of Shanghai CBD has changed dramatically since the completion of SWFC. The office market in Pudong has risen from undersupply to a vacancy rate of 20% (Wu, 2005).

4.4.8 Visual effects

The building's primary body is a square column (symbolizing the earth), pierced by two massive arcs (symbolizing the sky), which gradually narrow upward and meet at the top. The intersection of the columns with the curving lines creates the shape of the building. At the tower's summit, a sky doorway is also designed to balance the tower and unite the two opposing components of the sky and earth (Malott, 2009). This iconic hole faces the Oriental Pearl Tower so that the two towers intersect, bringing a sense of stability to Pudong's skyline.



Figure 4.4.8.a – View from the east. (Source: www.sohu.com/a/489645968_120823584)



Figure 4.4.8.a – View from the north. (Source: <https://finance.sina.com.cn/roll/2020-06-20/doc-iircuyvi9506085.shtml>)

CHAPTER FIVE: COMPARISON

5.1 Location

The three cases are in Asia and North America, with cultures and governmental systems embodying Western and Eastern styles. The cities in which the three cases are located, New York, Hong Kong, and Shanghai, are among the world's top-tier global capitals and cities. In an increasingly competitive urban environment, these three global cities are attempting to increase their competitiveness in various ways.

Midtown East and Lujiazui are New York's and Shanghai's core commercial areas and financial centers, respectively. West Kowloon, on the other hand, is primarily positioned in Hong Kong for commercial, retail, transportation hub, cultural, and high-end residential uses.

Regarding urban morphology, New York's Midtown East is located in high-density Manhattan, with a dense and strictly orthogonal grid topology. The planned neighborhoods are typically rectangular and less than 2 hectares in size, with the urban form exhibiting typical morphological characteristics of small neighborhood scale and high road density (Ma & Wang, 2020). West Kowloon in Hong Kong was built from scratch with the intention of generating a distinct urban form from the traditional grid city blocks. The at-grade vehicular infrastructure in this urban form is designed for quick traffic, with no direct link to the surrounding neighborhoods. The "block-plot-building" hierarchy is replaced by a "mega block-mega structure-tower" hierarchy, with high-rise buildings rising freely on podiums and independent of road orientation (C. Q. L. Xue et al., 2010). The urban form of Shanghai's Lujiazui is comparable to that of West Kowloon. Unlike traditional grid-like neighborhoods, it has a visibly veined form, an overall image of building groupings, and a proper height pattern. Within the confines of Lujiazui, isolated, opposing "castles" are formed, each bounded by a single building. Each "castle" is complete in form and function (Sun, 2006). The comparison shows the key importance of pre-existing urban morphology as well as the position of the supertall building within the masterplan (whether a new development or redevelopment plan).

5.2 Historical background

The development of Manhattan from rural to suburban to urban began in the nineteenth century. The Manhattan grid was designed and built in the middle of the nineteenth century. The overall urban form of Manhattan did not change significantly throughout the next 160 years of urban expansion but was only slightly reformed by neighborhood consolidation (Ma & Wang, 2020). In 2012, the Bloomberg administration showed clear concern that New York might fall behind Shanghai or Chicago in the global urban competition. The Midtown East Rezoning Plan was developed in response to this concern and seeks to promote the renewal of Manhattan's Midtown East neighborhood to increase the supply of business office buildings, improve the office environment, and increase job creation.

West Kowloon in Hong Kong was built on reclaimed land from the Hong Kong Airport Core Programme in the 1990s, which aimed to enhance Hong Kong's economy and restore long-term confidence by becoming a worldwide aviation center. As previously stated, West Kowloon consists of three distinct components with different contexts and development goals; Kowloon Station is intended to be a mega-transit hub and regional node capable of integrating the MTR and other modes of transportation, as well as a self-sufficient mini-city with commercial and high-end residential development. The background for XRL Station is Hong Kong's increasing connections with mainland China after the handover and the significance of Hong Kong's relationship with mainland China. The XRL and XRL stations were constructed to improve the information, capital, and human resources flow between Hong Kong and mainland China. The West Kowloon Cultural District is the result of the Hong Kong government's endeavor to create a new landmark for the city to boost economic development and urban competition and generate new symbolic capital for the built environment. The government was catering to the rising tourism sector by connecting culture, leisure, and entertainment and enhancing Hong Kong's role as a worldwide node in regional economic competition. Overall, West Kowloon was designed to strengthen Hong Kong's relations with mainland China and the rest of the world on the one hand and to boost Hong Kong's urban competitiveness in a globalized world through cultural marketing and branding on the other.

Before the development and planning of the Lujiazui area, there were some low-rise, congested, and unplanned rural buildings, industries, warehouses, and port structures. These agricultural and industrial buildings were completely demolished in the early 1990s to make way for the development of Lujiazui. In the context of China's reform and opening up in the 1980s, Lujiazui was envisioned as Shanghai's new major central business district and a national-level special economic zone to assist China's economic opening. Lujiazui became China's representative, playing a significant role in commercial and financial services, as intended during development.

In summary, the three large-scale projects were all designed to suit the economic and transportation needs of the city's development. Although the historical contexts of these large-scale projects differ, they all share some development goals, such as the desire to improve citizens' and businesses' urban experiences through urban construction or renewal and, more importantly, the desire to increase their influence and competitiveness in global and regional competition.

5.3 Masterplan and urban development process

The Midtown East Rezoning Plan for Manhattan was initiated by the Department of City Planning, with the participation of multiple government agencies and stakeholders. The plan involved the City Government, the City Council, the New York City Planning Commission, the U.S. Department of Transportation, the Land Use Board, other government agencies, stakeholders such as New York real estate developers, community groups, and the New York Hotel Industry Association. The redistribution of development rights is the critical component of the Rezoning Plan, developed in a multi-stakeholder game involving the government, developers, and civic groups. All parties in this process engaged in contentious discussions about how to fairly share the advantages of the new development rights with all stakeholders (Shen & Zhu, 2019). Government departments claim that the primary goal of rezoning is to enhance the city's competitiveness, increase employment and improve the office environment.

On the other hand, property developers are more interested in the financial advantages that may be achieved in this value hole caused by zoning constraints and want to build

more towers in the Midtown East area at a lower cost and faster pace. On the other side, community groups are the primary opponents of the Rezoning Plan's growth. Residents, for example, are strongly opposed to the increased congestion and density that rezoning could bring; the hotel industry association believes that the proposed regulations for natural permits for hotel functions would disrupt the existing hotel industry; and preservation groups and community boards believe that rezoning could endanger some of the buildings that give the area its character (Shen & Zhu, 2019). These disagreements take a long time to resolve in American democracy. The zoning framework for New York's Midtown East area was finished and changed after three years of multiparty interaction. The updated guidelines ensure that the City's additional development rights given to the region are divided evenly among the various interest groups.

West Kowloon development in Hong Kong has also been the topic of argument and gamesmanship among various players and stakeholders, as well as opposition from community groups. Before the handover, the British Hong Kong government initiated the West Kowloon project, and the major developers were the state-owned MTR Corporation and other Private Developers. The various stages of the development process, like the concept of West Kowloon, had diverse participants and advocates. The austerity of the Kowloon Station project was imposed by market and site factors rather than by urban planning systems. The Hong Kong government had previously adopted a policy of positive non-intervention in the second half of the 20th century, which encouraged market dynamics to play a highly proactive role in the project to pursue absolute maximization of economic benefits. In the case of the Kowloon Station project, this building, known for its near 100% base coverage and super-height massing, is a direct physical manifestation of the real estate industry's urgent need to maximize profits (C. Q. L. Xue et al., 2010). The development of the West Kowloon Cultural District is comparable to that of New York's Midtown Rezoning Plan. In the early stages of construction, the government and the cultural elite dominated the West Kowloon project. It was a top-down mega-project. Therefore public opinion and expectations were ignored. Cultural groups and the general public were skeptical. This, combined with the onset of the economic recession during the same period, increased

public discontent and finally led to large protests. This required the project to be suspended and re-programmed for the West Kowloon project to accomplish its original goal while appreciating public and local cultural sector input and agreeing with all stakeholders on promoting and enhancing local culture. The latest project to be created in West Kowloon is XRL Station, likewise a politically contentious project. The most controversial aspect of the XRL Station's development was the PRC government's proposal for "co-location of immigration and customs facilities," which meant that a section of the station would be carved out for bi-location security, implying that this area would be entirely under the jurisdiction of mainland Chinese officials. Despite strong resistance to the proposal, which many Hong Kong residents think violates the SAR's territorial rights (Zhou & Choi, 2019, p. 190), the Legislative Council approved it.

Lujiazui is a significant precedent for China's transition from a planned to a market economy. The Chinese government, as well as domestic and international property developers, are the primary participants. The Lujiazui development process, particularly the early exploratory phase of the new district's establishment, heavily relies on the concept provided in the Lujiazui International Urban Design Competition. The competition's primary goal was to include the most recent Western urban form concepts for the development of the Central Business District. These physical forms will subsequently be blended into the Lujiazui Financial District's present economic concepts and market-oriented land reforms. These concepts are novel in China and stand out when applied to the physical planning of Lujiazui. At the same time, the organizers intend to attract global attention by hosting an international competition in which many prominent architects and planners would compete.

However, some argue that Lujiazui is a place that discourages varied human activities, owing to the single and monotonous architectural function and aesthetics (C. Q. L. Xue et al., 2011). Meanwhile, the master plan's rigidity and priority of automotive traffic over pedestrian connectivity limit the site's physical adaptability (Zhou, 2019, p. 145). The initial concept featured a total consideration of the 3D connection incorporated into the elevated urban platform, but it was ignored due to the government's and the building developer's indifference. Lujiazui shows through its spatial production how the

developmental state dominates the economy and participates as a privileged market player (Zhou, 2019, p. 119).

In conclusion, Manhattan's Midtown Rezoning Plan development process exemplifies an American-style democratic approach to planning that balances commercial and public objective through institutional design to accomplish an equitable redistribution of development rights. The case of Lujiazui shows through its spatial production how the developmentalist state dominates the economy and participates as a privileged market player (Zhou, 2019). In the case of West Kowloon in Hong Kong, the Cultural District was planned similarly to the New York case, involving all stakeholders and considering all parties' interests and expectations. During the implementation of the XRL Station, there were disputes between Hong Kong and mainland China regarding security.

5.4 Iconic architecture

	One Vanderbilt, New York	International Commerce Centre, Hong Kong	Shanghai World Financial Center, Shanghai
Developers:	SL Green Realty	Sun Hung Kai Properties Limited	Mori Building Co.
Function:	Office	Hotel Commercial Offices	Mixed-use (office, retail, hotel, museum)
Construction period:	2016-2020	2002-2010	1997-2008
Budget:	\$3.31 billion	\$3.85 billion	\$2.19 billion
Height:	427m	484 m	492 m
Floors:	58	108	101
Gross floor area:	162,600 sqm	274,064 sqm	381,600 sqm
Main materials:	aluminum, glass, terracotta	aluminum, glass, steel, reinforced concrete	reinforced concrete, steel, glass
Structure:	a concrete core and a structural hybrid with steel frame and concrete shear walls	reinforced-concrete central core and an eight-mega-column structure	a central core wall, and an outrigger connecting perimeter columns, beams, and braces

Table 5.4 – Comparison of the three iconic architecture cases concerning main architectural aspects. (Source: CTBUH Skyscraper Center., n.d.; Emporis, n.d.; Katz & Robertson, 2008; Mori Building Co., n.d.; Structurae, n.d.; Sun Hung Kai Properties Limited, 2012; Von Klemperer, 2015)

The similarities and differences between the three buildings are shown in Table 5.4. The three skyscrapers have similar heights in terms of building parameters, ranging

from 420 to 500 meters. The materials, construction techniques, and structures are similar.

One Vanderbilt's architectural form was intended to complement Grand Central Terminal, located to the east. A wedge-shaped void at the building's base narrows as the tower rises, and the tower's top is capped by several "pavilions" and a spire. The shape of ICC is primarily square, with a slightly thicker waist and slightly condensed head and tail; in contrast to a single straight up and down form, the bottom corners are trimmed with significant triangular cuts. The exterior glass curtain wall appears to be a "dragon scale" that extends from the roof to the ground and joins to the lower floors to create a "dragon tail"-like shape. The main portion of SWFC comprises two enormous arched slopes that come together at the top and form a square column. Later, the circular wind tunnel at the top of the structure was transformed into an inverted trapezoid.

Despite their disparate appearances, the three buildings share a common design approach and philosophy that considers the local urban context and cultural background. One Vanderbilt, for example, respects other elements in the neighborhood, allowing it to blend into Manhattan as a whole. On the other hand, ICC and SWFC take into account the surrounding urban landscape and incorporate elements of traditional Chinese culture into their shapes.

5.5 The implementation process

An analysis of the implementation processes of these three iconic buildings, including the design process, reveals that the cultural contexts, urban contexts, and political and economic systems of the various cities have an impact on project implementation.

One Vanderbilt is located in high-rise Manhattan, which was built more than a century ago. As a result, the design process included thinking about how to integrate the building into the Manhattan grid environment. Manhattan pioneered floor area ratio (FAR) targets, "incentive zoning" zoning programs, and a transfer of development rights system in the twentieth century. These systems imposed significant constraints on building design and implementation. The Midtown East Rezoning Plan also

significantly impacted the building's design process. In the context of the Rezoning Plan, the design and implementation of One Vanderbilt was a process of negotiation and compromise among various stakeholders.

Unlike One Vanderbilt, the ICC in Hong Kong was designed and built with few FAR and height restrictions. As previously stated, the compact form of the Kowloon Station was shaped by market pressure rather than an urban planning mechanism. The Hong Kong government adopted a Laissez-faire policy before 1997. It encouraged the market forces to play a highly active role in the projects to pursue the maximum benefit for the economic interests of the parties involved. In the West Kowloon development, the building form, characterized by a full-coverage urban block and high-rise volumes, is a crystallization of the urgent desire of the estate market (C. Q. L. Xue et al., 2010). ICC changed its plans and even design firms during the design phase, but the main reasons were building technology and cost-effectiveness rather than height and floor area ratio constraints.

In the case of the Shanghai World Financial Center, the primary constraints are not floor area ratio and height. It was also not the case with the ICC and Kowloon Station projects in Hong Kong, where market and site pressures dominated to maximize commercial benefits. As previously stated, SWFC was put on hold from 1997 to 2003 due to the financial crisis and capital flows. During this time, new skyscrapers in Taipei and Hong Kong surpassed the original height of 466 meters. To win the title of "World's Tallest Building," the developer increased the building's size to 492 meters. We can see from this that SWFC was designed and positioned to create an urban spectacle and a height that would draw attention. And the city government supports this because it will improve the city's image and attract investment. On the other hand, the building's design has been altered regarding height and appearance. Due to public and media concerns and dissatisfaction with the feng shui aspect of the original design, the circular cavity at the top of the building was changed to an inverted trapezoid design.

In summary, the challenges and problems encountered during the three cases' implementation varied due to political, economic, and cultural differences. This is a challenge that multinational architectural firms must overcome, especially for firms that

provide strong service delivery, which rely on the experience and dependability of the complex design, development, and implementation process to gain clients' approval.

5.6 Urban and visual effects of the iconic buildings

		One Vanderbilt, Midtown East District, New York	ICC, West Kowloon District, Hong Kong	SWFC, Lujiazui Financial Center District, Shanghai
City data	City Area (Land):	778.19 km ²	1110.18 km ²	6340.50 km ²
	City Population:	8,804,190	7,413,070	24,894,300
	Population Density:	11,313/km ²	6,801/km ²	3,854/km ²
	GDP (2020)	\$830 billion	\$370 billion	\$680 billion
Masterplan data	Site area (sqm)	880,000	830,000	1,800,000
	GFA (sqm)	5,574,000	2,776,000	7,225,000
	Density (FAR)	6.33	3.35	4.01
	Residential	1.60%	28.75%	5.00%
	Business (Office / Hotel)	6.70%	38.65%	64.00%
	Commercial (Retail)	81.90%	9.94%	13.00%
	Civic (Education, Arts, Culture Centre)	9.80%	22.66%	17.00%
Urban context of the iconic building	Buildings function	The building is located in the business and financial district and relatively close to commercial and residential areas	The building is located in an area with commercial and retail, transportation hub, cultural and high-end residential functions	The building is located in the central business and financial district.
	Street hierarchy	Orthogonal grid, with small block size and high road density	"Superblock - Mega Structure - Tower" mode, buildings are surrounded by rapid transit road	Buildings are surrounded by rapid transit roads that have a pulsating form
	Public transport	Highly accessible, the building's base is part of the public transit system	Highly accessible, the building's base is part of the public transit system	Highly accessible, the building's base has a reasonable allocation arrangement for pedestrians and motor vehicles
	Building heights	Surrounded by high-rise buildings, the One Vanderbilt itself is the tallest building in the site	Surrounded by high-rise buildings, the SWFC is the second tallest building in the site	Surrounded by high-to-mid-rise buildings, the ICC is the most outstanding building in the site

Table 5.6 – Comparison of the masterplans and urban context of the selected buildings.

(Source: Aversa, 2020; census2021.gov.hk, 2021b, p. 20212021, 2021a; Department of City Planning, 2017b, p. 2; National Bureau of Statistics of China, 2021; Shanghai Municipal People's Government, 2011, 2022; Survey and Mapping Office, 2021; United States Census Bureau, 2021; U.S. Census Bureau, 2021; Zhou, 2019, p. 107; Zhou & Choi, 2019, p. 151)

Table 5.6 compares the three buildings' locations concerning the masterplan and the surrounding urban context and how the iconic structures are incorporated into the plan. There are similarities and differences between them based on the analysis of various features.

The locations of the three skyscrapers are somewhat comparable in terms of the buildings' functions. One Vanderbilt and Shanghai World Financial Center are where commercial and business activities predominate. West Kowloon, where the ICC is located, has a broader range of uses, with a higher proportion of residential, commercial, and civic. Based on the functional attributes of these three locations, the positioning of these three iconic buildings is similar in terms of function; all of them are primarily offices, except SWFC and ICC, which also have business hotels and other amenities. Iconic buildings functionally match the site's characteristics, further enhancing the local commercial properties and raising the area's commercial value.

The three cases' analysis reveals some common tactics KPF employed to address the interaction between iconic buildings and their surroundings. The three cases, especially One Vanderbilt and ICC, use a strategy of integration with public transportation to connect the buildings to their surroundings. By integrating a portion of the building space with the public transportation system, they not only improve the traffic and pedestrian environment but also enable the buildings to integrate better into their surroundings. And SWFC creates a barrier between the pedestrians using the subway and the vehicles entering the base and the nearby roads. On the other hand, the buildings have unique entrances and exits based on their intended use. By taking these steps, the building can better integrate with its surroundings and create a harmonious relationship with the local traffic system. Another common strategy is to integrate the architecture with its surroundings by adding public areas or links to existing ones. For instance, One Vanderbilt has designated the section of Vanderbilt Avenue immediately to the east of the site as a public space, closed to vehicular traffic, and ICC has utilized the end structure of the building to create a sizable lit glass atrium. The atrium, visible from the rest of the project, connects the shopping arcade below to the Airport Express/Metro station by acting as a public link between the rail platform and retail functions. Additionally, SWFC created a podium that functions as a transition

from the tower to the nearby park and boulevard, which was intended to be an expansion of the park itself. In addition, the building's east and south sides are close to a public green area connected to the greenery inside the base.

Consideration of the regional cultural context is another crucial design strategy. For instance, One Vanderbilt's design incorporates Manhattan's original architectural style, making it both a unique local landmark and a building that blends in with the surrounding buildings. To make the ICC and SWFC more appealing to the local populace and mainstream media, the buildings also incorporate traditional Chinese culture, Feng Shui, and local architectural elements.

Another common feature of the three iconic architecture is the expectation of the single piece of architecture within the masterplans. According to information from the Midtown East Rezoning Plan, the plan calls for a contemporary building to support the growth of modern office space in the East Midtown region. The One Vanderbilt project aims to meet the demand for several development sites along Vanderbilt Avenue. In the near future, these locations offer the chance to provide contemporary commercial space close to Grand Central Station. It establishes a mechanism to connect brand-new commercial construction with significant infrastructure upgrades around the Grand Central Station region. Kowloon Station Development aims to create a highly compact and efficient 'vertical city.' Therefore, the plan for Kowloon Station is to create a super-tall financial complex that is the tallest landmark in Hong Kong. SWFC was one of three supertall skyscrapers in the master plan for Lujiazui.

At the time, the SWFC was expected to be the tallest building in the world. To summarize, the expectation of these three iconic architectures shares three characteristics. First, each of the three iconic buildings was envisioned as a landmark within the master plan. The designers attempted to create a prominent, eye-catching piece in terms of height, form, and style. ICC and SWFC, in particular, are vying for height rankings. They both desired to be the tallest building in the region. Despite the FAR restrictions, one Vanderbilt developer obtained an additional floor area ratio by proposing traffic improvements around Grand Central Station and contributing to the District Improvement Fund. This eventually increased the building's height to 427

meters, making it the tallest building in Midtown East and the second tallest in New York (at completion). Another expectation is that the three iconic buildings' developers wanted to create a destination where people from all over the world could come together to enjoy and share a wealth of information, knowledge, and culture, as well as a place to explore new business opportunities. This location has the potential to attract a large number of people, logistics, capital, and information flows to congregate and flow here. The building can also interact with the surrounding office towers, resulting in a significant gathering effect.

In terms of visual impact, the three iconic buildings have similar and distinct effects in the context in which they are situated. The materials and construction techniques, as well as the structure and some architectural details, are shared by the three buildings. One Vanderbilt and SWFC, for example, have facades that slope upward and gradually narrow upward. The other three buildings have similar glass façade forms and architectural line rhythms on their facades. This gives the buildings in the skyline a sleek, sophisticated appearance. One Vanderbilt is more visible in the Midtown East skyline when it comes to the impact of iconic architecture on the skyline. This is due to the height of One Vanderbilt and the building façade materials, which differ from the surrounding buildings. SWFC and the adjacent high-rise complex form a distinctive skyline in Lujiazui. At the same time, because of the skyscraper competition in Lujiazui, SWFC's silhouette blends into a large group of aesthetically appealing skyscrapers. The ICC at Kowloon Station is a different story; as the only super-tall skyscraper in West Kowloon and even on the north shore of Victoria Harbour, the ICC commands a prominent visual presence in the West Kowloon skyline. This is because of two factors. One is the ICC's superior height, and the other is that its function and architectural form differ from the surrounding buildings.

CHAPTER SIX: CONCLUSION

The final chapter aims to outline the thesis' analysis and conclusions and elaborate on an understanding of the comparisons between the selected research cases. The main question addressed by this thesis is, "what is the role of the iconic building in large-scale urban development?" and "what are the similarities that exist between one iconic project and another?" The last section will explain the thesis' limitations or remaining issues and make methodological recommendations to address these shortcomings and limitations.

6.1 The role of the iconic building in the masterplan

The paper investigates selected cases of iconic architecture and the masterplans they are part of, as well as a thorough analysis of the impact of iconic buildings on masterplans. Three recurrent roles are important to explain the iconic building's role in the masterplan.

The first role of iconic architecture for the masterplan is to improve the city's or area's image. As stated in the thesis literature, iconic architecture has a branding effect on a city. It is an essential factor in shaping a city's overall spatial image. This has a similar effect on large urban projects. As with the masterplan, it was introducing one or more super-tall iconic buildings is expected to shape the area's image as a high-end business district. The ICC, for example, has elevated West Kowloon from its original image as a reclaimed-land area and haven to a core business district second only to Central in Hong Kong. By introducing modern office skyscrapers, Manhattan's Midtown East has also changed the perception of the area's decline which was caused by aging office facilities.

The second role is a positive effect on the economy. Through case studies, it was discovered that famous supertall buildings have various beneficial economic and commercial impacts on the area where they are situated. First, the completion of a skyscraper draws international companies to the site and raises the commercial value of the surrounding business district. For instance, West Kowloon is now Hong Kong's

second main business district, thanks to the construction of ICC. And the construction of SWFC has significantly altered Shanghai's CBD's layout. The city observation deck on the top floors of the three iconic buildings and the high-end business hotels in the ICC and SWFC are just two examples of how the skyscraper serves as a spectacular tourist attraction that profits from tourism. This increases the value of a UMP for tourists.

The third role is spatial management over the area. Iconic buildings use their distinctive volume and form to govern the architectural forms of their surroundings. For supertall buildings, one must consider transportation and their contribution to improving the organization of ground floor/street spaces and beautifying the visual environment. In all cases, the presence of the new building contributed to enhanced attention to transportation matters in the masterplan. Iconic high-rise buildings are crucial elements in the urban space for people to understand the urban environment.

6.2 Circulation of architecture and design strategies

After examining the three cases, we can conclude that they all share similar qualities in terms of architectural design, structural design, and façade style. One Vanderbilt and SWFC, for instance, share a similar architectural style. Both take on the appearance of facades that set back upward and gradually get smaller.

There is a circulation of design strategies in the ways in which supertall buildings connect to the masterplan in addition to the circulation of architectural elements. The way One Vanderbilt and ICC are connected to public transportation demonstrates their circulation strategies. Both buildings are directly connected to the subway and the regional transit system on the ground floor, resolving the transportation and public space issues. They are both intended to be mixed-use buildings. The building can be used not only as office space but also as a high-end business hotel with an indoor observation deck. The use of various floors for various purposes ensures higher economic returns.

Regarding integrating the buildings with their surroundings, KPF used a similar strategy for all three buildings. They all use a portion of the building's ground floor for

public spaces that functionally respond to the surrounding environment. One Vanderbilt, for example, has designated a portion of Vanderbilt Avenue to the east of the site as a public space. It also established a mechanism to link new commercial development to major infrastructure improvements throughout the Central Station area. ICC used the building's end structure to create an atrium with retail and rail platform functions as a link between the building and its surroundings. SWFC then used the podium and greenery within the base as a transition to the surrounding public space. These strategies allow for a better integration of the building with its surroundings.

Another common strategy is to complement transnational expertise design with local traditions and culture in mind. This is reflected in the ICC and SWFC designs. Because both buildings are in China, they used, more or less rhetorically, the traditional Feng Shui doctrine. According to publicly available interviews with the designers of these two buildings in the literature, they both indicated that they carefully studied the Fengshui doctrine when designing their buildings. The architects have sought solutions from the traditional Chinese Feng Shui doctrine in the shape of the building and the relationship between the building and its environment.

According to the analysis of the cases in Chapter 4, the cities where the three cases are located have significantly different political, economic, and cultural contexts. As a result, Multinational firms face various challenges when carrying out work in these diverse locations. In the case of One Vanderbilt, Manhattan's zoning plan imposed strict restrictions on the building's FAR and height. The conflicting interests of multiple stakeholders in the development process also influenced the building's design. This required KPF to be constantly reacting to the area's policies and to collaborate with all stakeholders throughout the design process. There are no zoning restrictions in Shanghai as there are in Manhattan. However, as seen in the planning process for Lujiazui and the implementation of SWFC, the project has been dominated to a greater extent by the government's will. As a result, multinational design firms must understand the true intent of government policy and maintain a positive relationship with the government.

Another point to consider is the culture. Besides the connection to Chinese Feng Shui, it is clear that multinational design firms must understand the regional culture and incorporate local culture into their design management approaches. Similar cultural differences exist in other regions of the world where multinational firms operate.

6.3 Research limits and suggestions

This thesis has gained some understanding of the international circulation of iconic high-rise buildings and their role in large-scale transformation. However, it is a very complex and extensive topic, and the analysis can expand significantly.

The cases studied by the author are all in foreign countries. Because of the limitations imposed by the conditions, the author was unable to conduct on-site research on the buildings. Similarly, conducting interviews or collecting other primary data are activities that can corroborate the research presented here. The evidence considered in all cases could have been extended in this manner. The analysis of the design and implementation of the landmark building in the case and the relationship with the masterplan may not be comprehensive because the author only found limited information to analyze, and study based on the relevant materials. Furthermore, due to the paper's length and time constraints, only three case studies were analyzed in depth. A greater number may be possible and relevant in answering the research questions posed here, according to the analysis of KPF's transnational networks and trajectories. As a result, potential additional arguments may be overlooked. Finally, different methodologies may support different understandings of the cases. For example, mapping methods, visual analysis methods, and other masterplan analytics have been experimented with in recent years.

As a result, some suggestions and additions to the flaws above are proposed. To begin, more research with higher number of case studies can be conducted to make the analysis more in-depth and the results more accurate and comprehensive. Second, more research that can be done using various methods. For example, to collect

primary data, interview architects and stakeholders, expand visual and mapping methods, and analyze on-site.

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