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Capturing the Placemaking Potential of the New Skyscraper City

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Abstract

This paper is a comparative analysis between Qianhai and an earlier case with which Qianhai bears many similarities: Canary Wharf in London. Both were envisaged by government to serve as new centres for international business. Both are "water cities" built on riverside brownfield sites at the periphery of established urban centres. That both are built on relatively "clean slates" is as much a challenge as an opportunity in terms of appropriately phasing and scaling development, building urban variety and vitality, and connecting the new district with the surrounding urban fabric and existing business centres. The developers of Canary Wharf believed that simply building a critical mass of skyscrapers was sufficient. This paper will outline additional urban design factors critical to achieving success.

Keywords: Mixed-Use; Public Space; Transportation; Urban Design; Urban Planning

Introduction

Many cities across China have designated special areas to accommodate rapid urban expansion. Qianhai, west of Shenzhen's traditional business centers, is one such case. This massive new skyscraper development will be built on reclaimed land bordering the Pearl River estuary.

Though large-scale high-rise centers built from scratch have been planned all over China, this is not a new phenomenon in global terms. Similar strategies were part of urban regeneration efforts in other countries during the decades following World War II. Such schemes were not without design and transport failings which affected their overall success to varying degrees. In planning Qianhai and similar megaprojects, it is imperative that we learn from history to create vibrant, successful, and sustainable urban destinations.

This paper is a comparative analysis between Qianhai and an earlier case with which Qianhai bears many similarities: Canary Wharf in London. Both were envisaged by government to serve as new centers for international business and to provide the structural characteristics necessary to harness the growth potential of the modern service economy. Both are "water cities" built on riverside brownfield sites at the periphery of established urban centers. That both are built on relatively "clean slates" is as much a challenge as an opportunity in terms of appropriately phasing and scaling development, building urban variety and vitality, and connecting the new district with the surrounding urban fabric and existing business centers.

How can Qianhai innovate upon the typology of the new skyscraper district and avoid past urban design errors to eventually form a viable, vibrant, and integrated urban quarter?

Selected cases

Canary Wharf

A famous example of a business district developed from scratch is London's Canary Wharf, now one of the world's foremost financial centers.

Background

London's Docklands was once the busiest port in the world, taking in goods and exporting to the furthest reaches of the British Empire. The West India Docks on East London's Isle of Dogs, named for their role in accommodating trade with the colonies of the West Indies, were built in stages from the beginning of the 19th century.

By the 1970s, rendered obsolete by the containerization revolution, the port economy had all but collapsed. The effect on the local population and environment was devastating. Unemployment rates eclipsed the national average and the area hemorrhaged population. The

Docklands was largely abandoned, forming a vast 6,000 acre wasteland.

Yet this blight sat only five kilometers from London's traditional financial center and its regeneration was recognized as an opportunity to invigorate the ailing economy by providing space for an expanded financial services industry.

Canary Wharf

Various visions emerged for the Docklands redevelopment. In 1981, the London Docklands Development Corporation (LDDC) was founded and vested with the means to plan and promote the regeneration of the area. Initially, the district was poorly integrated with the rest of London. The LDDC started by improving road and bus links.

A turning point in the scale of development envisioned for the district came in 1985, when bankers proposed building a financial services center at Canary Wharf, a site encompassing the former West India Docks. Margaret Thatcher's "Big Bang" deregulation of the financial markets in 1986 dramatically increased demand for large floorplate, modern office space in central London. Canadian firm Olympia and York signed an agreement to develop Canary Wharf using a similar high-rise model as their previous work in North America.

For some years following construction, Canary Wharf stagnated during a slump in the property market. Office vacancy rates were high. The area still had poor regional integration and unfriendly pedestrian environments. Following the recovery of the office real estate market and the development of improved transportation connections Canary Wharf saw success, and today has developed into a fully-fledged business center home to numerous international firms.

Qianhai

Background

In 1980, at the beginning of China's economic reform, a town at Hong Kong's northern frontier called Shenzhen was designated the country's first Special Economic Zone (SEZ), offering a freer business environment to attract foreign investment. Today, there are numerous similar economic and industrial zones across China, but Shenzhen in particular has been wildly successful. It has grown from a small town of 20,000 to a city of more than 10 million and now boasts the highest per capita income in the country.

Many manufacturing facilities have left Shenzhen, and like London in the 1980s, the city is now looking to capture the potential of the growing service economy. In order to rival financial giants like Hong Kong and Shanghai, and to develop a synergistic relationship with Hong Kong enterprise, Qianhai is envisaged to serve as an "experimental business zone" specializing in modern service sectors like finance, information technology, logistics, professional services, and creative industries. To this end, the government is instituting numerous policy reforms within Qianhai to help attract international investment.

Figure 1. The towers of Canary Wharf from a distance. (Source: Adrian Pingstone, public domain)

Figure 2. A rendering of the One Excellence multi-tower development, as viewed from Qianhai Bay. (Source: Farrells)

One Excellence Qianhai

One Excellence Qianhai, a mixed-use office and residential tower development with retail and community facilities below, is the first development in Qianhai.

Construction of Phase One, a pair of 178 meter high office towers sharing a canopy cast gracefully in between, is nearly complete. Nearby, a planned 200-meter office tower sits in next to its taller sibling, a 305-meter iconic landmark tower. The sail-like form of both structures reflects the nautical design influence flowing throughout the development. The landmark tower bears a graceful outward curvature which maximizes the lettable floor area facing the best views of Qianhai Bay to the west and southwest.

Housing is an integral part of any mixed-use development. Business districts of singular land use typically suffer from lifeless, unsafe streets after dark. One Excellence incorporates two serviced apartment towers of complementary height; 200 and 100 meters respectively. The crescent-shaped arrangement of the two buildings also helps maximize favorable views of Qianhai Bay. The shared clubhouse, with a form inspired by a billowing cloud, sits atop the shorter tower and artfully connects to the midsection of the taller one.

Analysis

Transport and regional integration

Canary Wharf and many other large-scale business developments suffered from poor regional integration in the early years, affecting their success. Canary Wharf's situation improved as additional transport links were completed. In contrast, Qianhai is planned as a regional railway hub, with some metro lines having been opened already, and several others planned.

Canary Wharf

Attracting private investment to Canary Wharf was difficult due to the area's isolation and inaccessibility despite its location near the heart of the capital. At the beginning, there was no public transport. The Docklands Light Railway (DLR), commissioned in 1987, ran largely on obsolete industrial trackage.

As Canary Wharf was completed in the early 1990s, the London commercial property market collapsed. There was little demand for space in the complex. A major contributing factor to Canary's Wharf's unpopularity was the poor transport, namely the lack of a Tube connection. One Canada Square, then the tallest building in the United Kingdom, sat half-empty for several years. The project was widely derided as a white elephant.

The DLR route was indirect and the area remained poorly integrated with the rest of London. A long-term solution which could truly and finally integrate the development with the rest of London was a Tube extension with a station at the skyscrapers' doorsteps. This gained government support after Olympia and York committed to funding much of the scheme, and construction of a Tube connection began as an extension of the existing Jubilee Tube line. This opened in 1999, providing a quick link to London's traditional core to the west as well as major railway stations at Stratford and Waterloo. Canary Wharf Station boasts a vast underground concourse and represents the most impressive architecture of the extension.

Canary Wharf's economic success and reputation turned around in the new millennium. Partly this was due to a recovery in London's property market. But the 1999 opening of the Jubilee Line Tube extension played an integral role in uniting the area with central London and overcoming the connectivity problem which had made the area so undesirable to developers and potential tenants.

The Canary Wharf experience demonstrates that having a critical mass of skyscrapers alone is not sufficient to ensure success. Equally important is regional integration through transport linkage on par with that of established urban districts. Without a Tube link, the district would never have taken off to achieve eventual runaway success. Only a few years after the opening of the Jubilee Line extension, Canary Wharf tube station was heavily congested. Today, Canary Wharf is by some estimates the second-busiest station of the London Underground.

Figure 3. Canary Wharf tube station. (Source: Garry Knight, Creative Commons Attribution-Share Alike 2.0 Generic)

Qianhai

As demonstrated by the Canary Wharf experience, the provision of transportation infrastructure in a new development area is a challenging "chicken and egg" conundrum. The LDDC had difficulty garnering political support for significant transport investment in an unattractive hinterland, but without adequate infrastructure the agency had difficulty attracting anything more than fledgling private investment.

Owing to changing development plans and difficulty attaining financing, the LDDC took a slow, observational, and prudent approach to improving transport infrastructure. But Canary Wharf was always competing for private investment with London's traditional business center, especially as the property market faltered in the early 1990s. Central London is where numerous Tube and railway lines converge, and is thus ideally connected. Convenient public transport is essential to the competitiveness and overall success of new development areas.

The Docklands Light Railway was the Dockland's first attempt at providing higher-order transit to lure investors to an area otherwise known as a disconnected wasteland. But the DLR required inconvenient transfers to reach the city center and did not sufficiently unite the Docklands with the surrounding urban fabric. Simply providing any railway is not enough to spur development – new infrastructure must aim to provide speed and convenience on par with that of existing transport hubs.

A high-frequency, high-capacity metro line, seamlessly linked to other centers, is ideally suited to skyscraper districts with high working and living densities. This is clearly a costly endeavor and it can be difficult to garner the political will to make such early massive investment in an undeveloped corner of the city. It requires visionary foresight and commitment.

Qianhai has benefitted, from the outset, from the Qianhaiwan Station opened in 2011 serving Shenzhen Metro lines 1 and 5. While an ordinary metro line serving an undeveloped area would require significant subsidy, Qianhaiwan Station was built as an intermediate station as part of a westward extension of the existing Line 1. The station is otherwise necessary as an interchange between two lines, and as the metro service is not a standalone line and the station is surrounded by prime developable land, the risk of the railway becoming a white elephant is nil. As an intermediate station halfway between an international airport and Shenzhen's established urban centers to the east, Qianhai is more attractive in this respect than Canary Wharf, which is significantly farther than central London from Heathrow Airport.

Figure 4. Qianhaiwan Station of the Shenzhen Metro. (Source: User DeBit at Wikimedia Commons)

At Canary Wharf, the LDDC had trouble garnering support for a costly Tube link to the city center but, as eventually demonstrated, failing to provide high-quality public transport from the outset such that a new development area can compete with existing centers can severely diminish development prospects and render the area particularly vulnerable during times of weakness in the property market. Qianhai appears to be striking an appropriate balance. Boasting an intermediate interchange station on a well-used metro line, train services have been high-quality and attractive to developers from the very beginning. Further expansion of the railway network will meet future demand and strengthen Qianhai's status as a transport hub.

Waterside urbanism and the groundscape

High quality public transport is a critical factor toward the sustainability and success of new skyscraper districts. But merely building high-rises alongside a transit node is not enough. Designers must carefully consider the "last mile problem" – the challenge in bridging the gap between transit stations and homes or workplaces. The district must be walkable and vibrant. Walkability depends on the quality of the groundscape: the landscaping, streetwall design, traffic planning, as well as the availability of shops and services along the route.

New urban districts often lack distinct character and fail to be embraced by residents as successful urban destinations. The waterside condition at both Canary Wharf and Qianhai offers immense placemaking opportunity, but careful urban design is key to harness this potential. How can we instill in new developments the qualities which make old districts so special, vibrant, interesting, and walkable? How can we maximize the placemaking potential of waterside development sites?

Canary Wharf

Canary Wharf is a mixed composition of low and high rise buildings arranged around civic squares and the existing docks. The centerpiece of the plan is One Canada Square; formerly the United Kingdom's tallest building at 235 meters. Topped by a giant pyramid and highly visible from around the city, the tower stands like a beacon, beckoning investment to east London.

Canary Wharf's highly unique waterscape was a double-edged sword. The Thames and the various docks chopped the district up into numerous disconnected parcels, and also severed it from nearby areas of East London. Despite the Docklands' proximity to the City, it was simply not on the mental map of Londoners. Nor was it on the paper maps; many did not cover areas east of the Tower of London. On the other hand, the district's waterside condition offered potential to develop an urban design experience unlike any other in London. The edge condition of waterfronts can enable opportunities for peace and leisure in the middle of the city, with lower noise and pollution, and provide opportunity for long, interrupted walking routes by allowing the public access to areas

which were closed for so many decades to prevent the theft of goods in transport.

The original plan for Canary Wharf included a seven-floor central axis. Olympia and York successfully demanded this be lowered to bring the public realm closer to the water. Today, the area is indeed a "water city," the former docks a ubiquitous reminder of the area's industrial heritage. The water's edge is irregular, with towers jutting out to form impressive artificial promontories. A continuous waterfront promenade lines the docks, with the wall of buildings opening up occasionally to reveal the civic squares sited at the interior of the various development clusters.

The Canary Wharf scheme in its early years was called a "commercial citadel" for its singular land use geared overwhelmingly

Figure 5. The docks formed a barrier between the corporate realm of Canary Wharf and the surrounding neighborhoods. (Source: User Mattbuck at Wikimedia Commons)

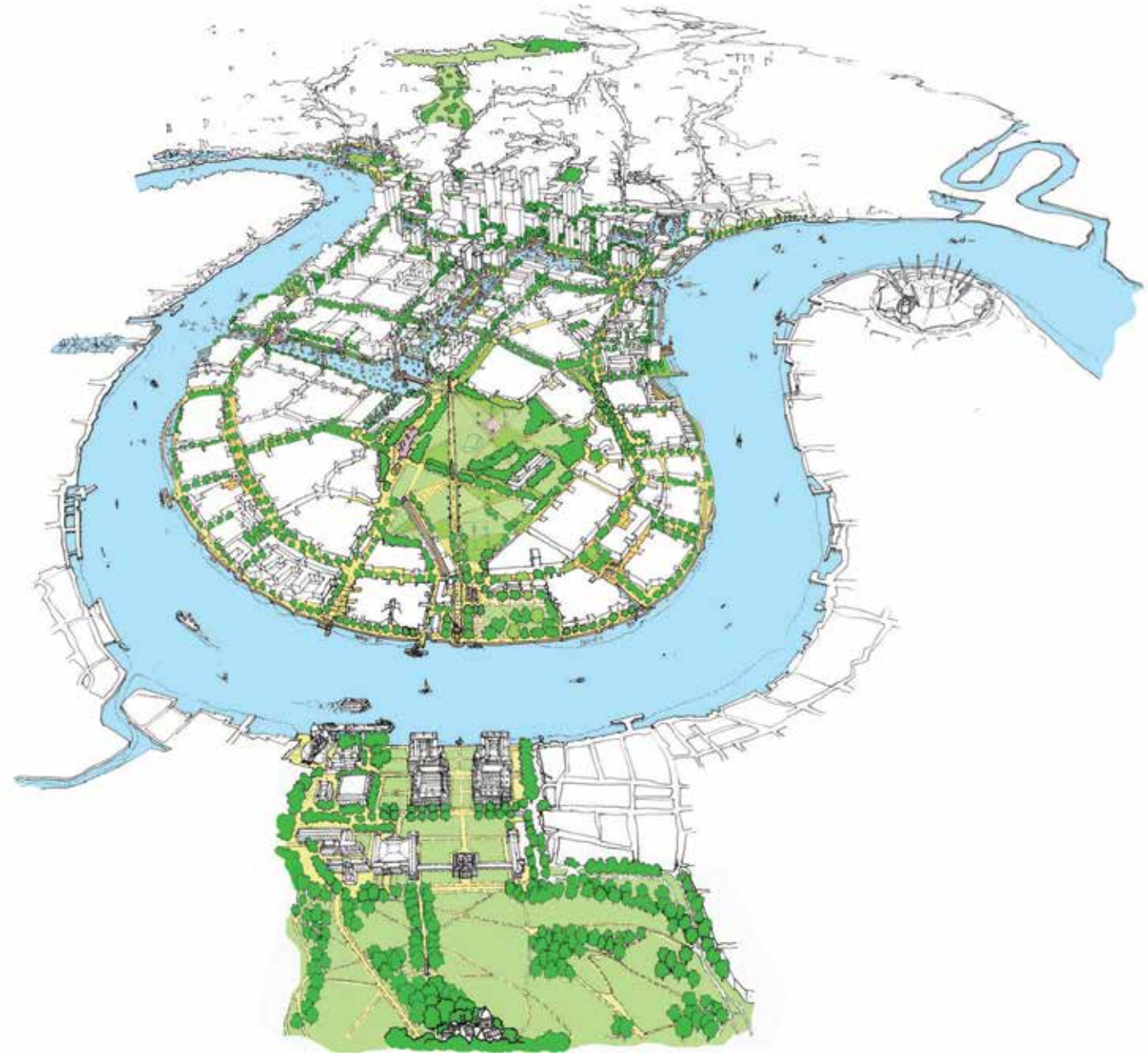

Figure 6. Terry Farrell produced a masterplan for the Isle of Dogs that sought to unite the "corporate citadel" with the surrounding communities through a network of parks and water spaces. (Source: Farrells)

to attract the financial services industry. The lack of significant residential offerings meant that most workers commuted from afar (relying on the inadequate public transport). Even though apartments were built later, they are clustered around the commercial estate – not within it. Land uses are poorly integrated, contributing to a general aura of lifelessness outside of office hours which is still evident today.

As Edwards (1992) highlights, Canary Wharf is an awkward integration between the modernist American skyscraper typology and the European tradition of monumental public squares. He writes: "French urban classicism is not happily infilled with Manhattan styled office blocks. The two great traditions of Western architecture - the square and the skyscraper - are apparently seeking a marriage at Canary Wharf. The results suggest the inherent incompatibility of the two approaches: the square contains space by urban mass, whilst the skyscraper is an object in space."

Figure 7. One Excellence Qianhai is centered on a main pedestrian access emanating from the Qianhaiwan Metro Station. (Source: Farrells)

The result is not unique to Canary Wharf and the problem has been summed up by Danish urbanist Jan Gehl as "too big, too tall, and too fast". Traditional European squares are tight spaces enclosed by small buildings, small shops, and small restaurants. They developed over decades (or centuries) through an organic process of adaptation and accretion. Gehl laments:

"Today, urban planning decisions are made on the drawing board, and little time is lost between decision and realization. […] with the result that new urban areas are often built on a scale far removed from what people perceive as meaningful and comfortable." (Gehl 55)

The rectilinear spaces at Canary Wharf are vast, and though some buildings incorporate frontage of shops and restaurants, the activity generated is insufficient to overcome the overall impression of cold, corporate modernity.

In a bid to maintain flexibility, no master plan was prepared for the greater Docklands region. An unintended side effect was a general lack of cohesiveness in the public realm. At a macro level, the planned Canary Wharf citadel was not knit in with the existing settlements of the Isle of Dogs and was criticized for not benefiting these "deprived communities". Within the development site, there was no obvious focal point to the public realm. On the other hand, the development was noted for high quality public furnishings and materials which had a positive unifying effect.

The public realm in Canary Wharf suffered from several failings. Many buildings partially turned a blind eye toward surrounding public spaces and canals. Only with the introduction of greater mixed-use planning did Canary Wharf flourish, subsequently becoming one of the most powerful financial centers in Europe. In addition, better knitting the development with the surrounding district can help overcome the "corporate citadel" effect. With a mix of uses and integration with the local surroundings, a skyscraper development is far more likely to enjoy success and to harbor urban vitality.

One Excellence Qianhai

Though respected urbanists like Jan Gehl advocate a slower, gentler mode of urban expansion, the One Excellence Qianhai development exists within the realities of the modern-day development regime in China, where vast new cities are thrown up virtually overnight. Qianhai will not benefit from

Figure 9. The gateway towers of One Excellence Qianhai, which have recently topped out. (Source: Farrells)

decades of gradual growth as have the great public squares of Europe. But the architects of One Excellence Qianhai, having considered the failings of schemes such as Canary Wharf and the factors in the success of exciting older districts, have articulated the public realm of the new development in hopes that the district may eventually form a vibrant, mixed-use destination.

One of the most common problems plaguing modern commercial developments and stifling urban vibrancy is deceivingly simple: blank walls at ground level. Many architects of high-rise buildings fixate on making grand architectural statements while ignoring pedestrian comfort, safety and amenity. Certain buildings at Canary Wharf are emblematic of this disregard for the everyday human-scale experience, borne out in podiums of oppressive height and long stretches of blank wall punctuated only by emergency exits and ventilation grilles.

The towers of One Excellence instead incorporate many small storefronts housing shops, cafes, and restaurants with al fresco dining, all fronting on a pleasant pedestrian-oriented axis and serving to fulfill the daily needs of office workers. This main walk, as much a focal point for the development as the towers themselves, is defined by compactness and cohesiveness and is a direct response to the disconnected public realm of schemes like Canary Wharf.

The cultivation of a robust street-level environment in a brand new urban district requires thoughtful attention to connection and flow at the pedestrian scale. The pedestrian axis enables One Excellence to function as a transit-oriented development, allowing commuters to complete the final leg of their public transport journey in a pleasant, leisurely pedestrian environment where tenants and visitors alike are welcome to stroll, shop, dwell, and relax.

Multi-level pedestrian circulation networks are common in modernist office developments. Yet this is often for the sole benefit of automotive traffic, while pedestrians are made to traverse convoluted footbridges and pedestrian subways. At One Excellence, a multi-layered walkway system is provided, but not at the expense of walkability. A sunken plaza seamlessly extends from the metro station concourse. Tower entrances are provided at the basement, ground, and first-storey levels. In short, connectivity between the railway station and the office towers is effortless, and shop-lined walking routes offer convenience and foster urban vitality where many other similar schemes relegate commuters to sterile, indoor shopping environments or neglect the pedestrian experience altogether.

Many such modern developments have been criticized for turning a blind eye to their urban context, sitting instead as insular fortresses within the city. The separate development to the north of the Qianhai site is positioned as a major retail hub. One Excellence takes a more leisure-oriented approach. Characteristics like the inclusion of relatively less retail space, more restaurants, more opportunity to dwell and relax and convenient walking connections all combine to achieve a synergistic relationship with surrounding development.

Like Canary Wharf, Qianhai sits on an impressive waterfront. The waterfront will become a hub of recreation, culture, and a showcase of green urbanism, and is connected to a larger network of open spaces along the drainage channels which run through the site. In this way, core infrastructure also holds leisure and recreation functions. These channels divide the Qianhai area into distinct urban wedges. Pedestrian links to the areas beyond our site boundary are therefore of the utmost importance. The multi-layer circulation system provides an effortless east-west pedestrian axis through the site, enabling citizens to easily enjoy the wealth of recreation opportunities along the riverbanks and waterfront promenades provided throughout the district.

Figure 8. The podium levels of One Excellence enclose a lively pedestrian axis lined with shops and restaurants. (Source: Farrells)

Qianhai, built on reclaimed land, is truly a tabula rasa. In such a scenario, the tendency is for architects and engineers to enforce total grade separation between pedestrians and automobiles, hampering walkability and reducing streets to the role of mere conduits of traffic. Furthermore, in planning such a massive megaproject, the intricacy, use, and value of small urban spaces is often neglected. Engaging streetscapes are also essential to convenience and walkability and a host of related considerations like safety.

One Excellence is uncommon in its holistic marriage between big architecture and small-scale urbanism. In contrast to the introverted architecture and incoherent public realm of Canary Wharf, the pedestrian axis at Qianhai forms a highly legible focal point for community life. The placemaking potential of the waterfront site has been seized to develop a new coastal recreation destination.

Conclusion

Urbanization is inevitable. Nowhere is this truer than China, where the country's burgeoning economy has drawn hundreds of millions of migrants to cities. What form will this new development take? If Chinese cities relied on a car-oriented model, with dispersed land use, it would be an environmental and financial disaster of unprecedented proportions. Can skyscrapers offer a viable alternative?

As Canary Wharf demonstrated, a concentration of skyscrapers is not enough, in itself, to ensure success. Skyscrapers must be coupled with quality public transport and walkable, pleasant, safe, and convenient urban environments. Skyscrapers can accommodate densities sufficient to support high quality rapid transit. Hong Kong, a high-rise city, boasts the lowest energy usage spent on transport in the developed world, largely thanks to its extensive metro system. Designers must also aim to knit new development areas in with the existing urban fabric at both the regional and local scale, through public transport and walking networks respectively. Additionally, land uses should be diverse to enhance convenience, vitality, and urban complexity.

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