A SUSTAINABLE APPROACH TO LARGE-SCALE INTEGRATED DEVELOPMENT

TEN PRINCIPLES FOR A SUSTAINABLE APPROACH TO NEW DEVELOPMENT

CASE STUDY: TAI KOK TSUI

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Abstract

Over the past few decades, Hong Kong’s land development projects have grown ever larger in scale, resulting in a podium building typology, covering sites with areas ranging from 10 to 30 ha. While commercially successful, these large-scale developments are typically transit oriented developments (TODs) and are well connected at upper levels with, convenient footbridge networks and offer efficient linkages to mass transit; often resulting in isolated development at ground level and sterilised streetscapes. This paper utilizes the “ULI Ten Principles for a Sustainable Approach to New Development” and Space Syntax to analyse and assess Tai Kok Tsui. Key findings are highlighted along with benchmarking regional and international case studies conclude with lessons for Hong Kong. Ways to improve the current regulatory framework, planning and development practice are suggested to allow for a more sustainable approach to new development to ensure more integrated large-scale developments to shape a more livable, walkable and sustainable Hong Kong.

1. ULI Ten Principles for a Sustainable Approach to New Development

In June 2011, the Urban Land Institute (ULI) published the Ten Principles for a Sustainable Approach to New Development Towards Sustainable and Integrated Large-Scale Developments for a More Livable Hong Kong. These ULI Ten Principles (please see the link below) are well received as they highlight key issues related to new development and provide practical and relevant guidelines intended to have a positive influence on future of new large-scale developments in Hong Kong and the region. Using a collaborative process, the Principles were developed and benchmarked against some local, regional and international case studies. They focus on how large-scale development can be more integrated and less isolated from their immediate surroundings. The Principles encourage more integrated developments of appropriate scale with accessible public space, adding long-term value to the district and the city by improving the quality of life of people.

The ULI Ten Principles to ensure integrated large-scale developments for Hong Kong are: 1) Build on Your strengths: Rethink the strategic vision and policy framework; 2) Create Great Places; Adopt a place-making approach; 3) Extend the Urban Grid; Develop to an appropriate scale and density; 4) Open up Public Space: Provide accessible public open space; 5) Integrate Infrastructure: Ensure transport and infrastructure integration; 6) Activate the Streets: Enhance street level interface and continuity; 7) Keep it Flexible: Facilitate good urban design and flexible zoning; 8) Promote Sustainability; Go beyond sustainable building design; 9) Engage People Early On: Enable upfront public engagement; and 10) Manage, Control and Coordinate: Implement coordinated management control. The following gives an assessment of Tai Kok Tsui using the ULI 10 Principles further supported by analysis using Space Syntax. ULI 10 Principles: [http://bit.ly/ULI10PHK](http://bit.ly/ULI10PHK)
2. CASE STUDY: TAI KOK TSUI
Tai Kok Tsui is the former home of the Cosmopolitan Dock, oil depots and various industrial uses. Tai Kok Tsui sits between the hustle and bustle of some of Hong Kong’s most densely populated residential areas and popular tourist areas. Tai Kok Tsui is a neighbourhood in transition, and is undergoing a major transformation with a large number of urban renewal development areas mainly along the waterfront (Figure 1). New podium developments such as Olympian City over Olympic MTR station, consists of a shopping and commercial development with accompanying residential towers, restricts ground level access to the majority of the older urban area of Tai Kok Tsui and its residents. These new developments consist of towers typically reaching a height of almost 60 stories, surrounded by old low- to mid-rise buildings, not only hindering physical access, but also hampering visual permeability as well.

This section uses the ULI Ten Principles for a Sustainable Approach to New Development to assess the newer developments of Tai Kok Tsui (Figure 2). Space Syntax was also used to assess the Tai Kok Tsui area to highlight the contrast between the new and the older areas.

In order to study the spatial accessibility and cognition of the study area, the techniques and methods of space syntax analysis have been employed. Space syntax applies methods in graph theory to study the configuration of spatial networks in cities; it is based on research by Bill Hillier and Julienne Hanson at the University College London (Hillier and Hanson, 1984). An important aspect of space syntax is theorising the relationship between space and movement. In transport studies, space syntax measures were shown empirically to relate strongly to pedestrian flows and vehicular flows. (Hillier and Iida, 2005)

Key questions asked during the analysis and assessment include the following:

1. Are the routes between Mongkok, and development such as Olympian City and the Waterfront locally accessible as a pedestrian?
2. What are the spatial characteristics when comparing the traditional city and the newer developments closer to the waterfront?
3. Is the TKT waterfront and Mongkok district visually and physically accessible from TKT?
4. What are the main causes of severance between the two districts and its implications on the users of these districts?

2.1 BUILD ON YOUR STRENGTHS: RETHINK THE STRATEGIC VISION AND POLICY FRAMEWORK (PRINCIPLE 1)
TKT’s newer developments highlight Hong Kong’s current practice of isolated large-scale commercial and residential developments, which has resulted in developments such as Olympian City, a large mixed use podium structure with retail, commercial and residential uses. The presence of these large complexes that are isolated not only block views and tower over the older and low-rise buildings in the area, they often have poor street level interface and lack usable open space at ground level.

Originally composed of small grid systems, TKT with its industrial and residential buildings alongside each other, with dynamic neighbourhoods and continuous, vibrant street stalls and shops etc. have characterized this older area. Within a 200 m buffer, the total street length for Mongkok district equates to 4700 m with a total of 64 street segments. In contrast, within a 200m buffer, the total street length for Mongkok district equates to 1700 m with a total of 8 street segments (Figure 3).

These neighbourhoods are becoming increasingly scarce and at the risk of being overtaken by new isolated podium developments, which often create a wall at street level, allowing minimal urban design interest and cultural interaction, although internally sound, and commercially viable. The new large-scale developments have not built on TKT’s strengths, and also lack good integration to the old urban fabric.

2.2 Create Great Places: Adopt a place-making approach (principle 2)

Many newly created open spaces on the large-scale private developments in TKT are situated on podium, that is privatized. There is lack of high quality public space that is accessible at the ground level. For the public space of Olympian City, although there is a large LED screen, no place-making or urban design suggestions have been adopted like landscaping, attractive street furniture, shading/coverings and public art integrated with public space to create a vibrant and well-used public space for people local businesses. (Figure 4).

![Figure 3: Tai Kok Tsui Urban Geometry](image1)

![Figure 4: Public space of Olympian City](image2)

2.3 Extend the Urban Grid: Develop to an appropriate scale and density (principle 3)

TKT’s land use is a mixture of old and decaying tenement houses, factories and warehouses found mainly in the eastern portion, versus the modern residential developments found across the West Kowloon highway and closer to the harbour. The new developments tend to create a “disappearing urban grid” phenomenon, not only in the western portion of the area, extending into the hinterland as well. The leading cause of concern in the eastern portion of TKT lays in the contrast between the fine-
grain blocks of old TKT and the newer coarse-grain blocks, which accommodate the larger residential complexes.

For example Olympian City Phases I and II are situated on the waterfront, hindering waterfront access for residents of the older areas in the hinterland. Highways and a railway also bar waterfront access, compounded with this negative effect of the newer isolated developments. The urban grain analysis describes urban block size distribution, where the size of urban blocks has an important effect on pedestrian activity patterns. Smaller blocks in highly accessible areas increase street activity more retail space potential, allows greater permeability and offers economic opportunity and livelihood for all cross sections of society.

Study of the urban grain (Figure 5) shows that the large block size of newer developments such as Olympian City coupled with the lack of active street frontages and large motorway severance hinders inter-neighbourhood movement. The fine grain urban blocks of the traditional area and the presence of active frontages and balance between different transit modes support inter-neighbourhood movement.

Figure 5: Urban Grain

2.4 OPEN UP PUBLIC SPACE: PROVIDE ACCESSIBLE PUBLIC OPEN SPACE (PRINCIPLE 4)
Major open spaces of large-scale development in TKT are on podium which tend to be physically and visually less accessible such as the privatized open space of the private development The Hermitage (Figure 6). Another example is a playground situated on podium of Olympic City. Less people use the playground due to inconspicuous access from the shopping mall to the playground (Figure 7), the staircase of the access without universal design like sideway for people with baby trolley, the disabled and the old. The accessibility is low and not pedestrian friendly.

Figure 6: Privatized open space of The Hermitage
Figure 7: access to to the playground without universal design
2.5 Integrated Infrastructure: Ensure Transport and Infrastructure Integration (Principle 5)
The presence of the large scale developments along waterfront area of TKT such as Olympic City not only block views and tower over the older and low rise buildings in the area, and often have poor street level interface. Furthermore, the Olympic City area and TKT's lower class hinterland are divided by numerous highways and the airport express railway tracks, rendering the two places inaccessible to each other, demonstrating a most stark example of physical and cultural separation between the two sides of TKT.

TKT is entangled in highways and the Airport Express tracks, with the broadest stretch lying between the old fabric and Olympic City 1 (Figure 8). The Western Harbour Crossing forms a barrier, is very vehicle dominant and is not pedestrian friendly. As the raised walkways are the only way to cross between the old and new areas of TKT, poor pedestrian connectivity at ground level cause the public transport interchange (PTI) of Olympic City to be underused, becoming a wasted space. (Figure 9).

2.6 Activate the Streets: Enhance Street Level Interface and Continuity (Principle 6)
For the residents of the area the shopping malls within are convenient as the Mongkok market is less accessible for shopping. The highway overpasses (especially Tong Mi Road) have few pedestrian crossways, making it difficult to access Mongkok and other parts of Kowloon. Within the TKT area, the three different street grid arrangements (from different time periods) make navigation confusing especially for those unfamiliar with the area. Moreover, the large-scale developments like The Hermitage, Olympian City and Island Harbourview with “blank wall” design cause poor street level interface and continuity.

Space syntax accessibility measures (Freeman, 1977 via Hillier and Iida, 2005) how often a street segment will be part of a route from all spaces within a network at both global scale and local scale. Global accessibility measures how often a street segment will be a part of a route from all spaces within vehicular distance, whilst local accessibility measures how often a street segment will be part of a route within walking distance.

A Space Syntax accessibility model has been constructed for the study area. (Law and Zhao, 2009) The analysis suggests low local accessibility potential in the study area (Figure 10) resulting in low walkability, poor legibility and isolated movement near transport node. The highly accessible Argyle Street represents an opportunity to improve accessibility and connectivity towards TKT and the waterfront. Nathan Road and Argyle Street are highly accessibility at both a pedestrian scale and vehicular scale. This integration of scales and different modes of movement benefits informal social interaction and economic transactions between the different users of the city. In comparison, The West Kowloon Expressway is highly accessible at a vehicular scale (Figure 11), but highly inaccessible at a pedestrian scale. This
expressway allows for high speed movement at a vehicular scale but acts as a barrier for pedestrian movement and as a severance between the urban area and the waterfront.

The walking distance between Olympian City 2 and Langham Place is 7-10 mins. However, the lack of active frontages, large motorway pedestrian severance and the lack of legible routes, hinders access and interactions between the two districts. Moreover, The waterfront is within close proximity to Olympian City 2 illustrated in the crow-fly distance but physically inaccessible illustrated through the network distance resulting in no physical interactions to the waterfront for residents. (Figure 12).

**Figure 10**: Local Accessibility of TKT  
**Figure 11**: Global Accessibility of TKT  

**Figure 12**: Global Accessibility of TKT

### 2.7 Keep It Flexible: Facilitate Good Urban Design and Flexible Zoning (Principle 7)

The poor street level integration and “blank wall” design of the large scale developments in TKT is evidence of the lack of a good urban design plan. Although the newer developments in TKT are commercially very successful do not add vibrancy at street level and city life. The success of new developments should be measured not only their commercially viability but also the social and environmental sustainability and long term value they add to the neighbourhood, district and city.

There is a need for good urban design; district based planning and flexible zoning to produce 3-D urban design plans. Regulations such as 100% site coverage resulting in open space limited to the podium level create a pedestrian unfriendly environment at ground level should be carefully assessed. Also by allowing larger road footprints and
allowing streets to become wider more like barriers rather than paths will also dictate the type of developments that occur with the residential, commercial and CDA zones.

2.8 **PROMOTE SUSTAINABILITY: GO BEYOND SUSTAINABLE BUILDING DESIGN** *(PRINCIPLE 8)*

Although some of these large-scale developments may be sustainable at a building level they have done little to incorporate sustainability at a neighbourhood and district level or urban scale; developments such as The Hermitage and the Olympian City have poor physical and social integration with the surrounding areas such as well as no public space at the ground level to integrate with surrounding area *(Figure 13 & Figure 14)*.

Having sustainable and certified buildings following HKBEAM and LEED certifications but promoting sustainability beyond buildings, at the urban scale becomes vital for the health of the people and the city.

![Figure 13: No integration of The Hermitage to the Cherry Street Park nearby](image1)

![Figure 14: No public space to facilitate social sustainability](image2)

2.9 **ENGAGE PEOPLE EARLY ON: ENABLE UFRONT PUBLIC ENGAGEMENT** *(PRINCIPLE 9)*

Public engagement happens in Hong Kong but the process needs to be further improved and continued to ensure that newer developments add long term value to the district and the city, improving the quality of life of people. It is not clear how much community engagement actually happened prior to the new developments in TKT. By gauging the outcome of the process one can say the approach adopted was focused on short term commercial gain at the cost of long term value to the community, the city and the people of TKT.

Going forward Government, community and the developers should work together early on and keep the process transparent to ensure that the end result is a win-win situation for all. By adopting a district-based community planning approach to engage different stakeholders and the community at an early stage issues related to newer developments can be resolved. Keeping the participation process transparent and inclusive, Hong Kong can promote a better integration of large-scale new developments to surrounding areas at street level and thereby increasing permeability and social interaction as well.

2.10 **MANAGE, CONTROL, AND COORDINATE: IMPLEMENT COORDINATED MANAGEMENT CONTROL** *(PRINCIPLE 10)*
Although these large-scale new developments may be implemented and managed well addressing in part principle 10, they fail in all the other principles as indicated above. Having only raised walkways to connect buildings between the old and new areas of TKT, results in poor pedestrian connectivity and integration at ground level showing that they are less than desirable on an urban scale.

Good planning and development control, and overall management program is needed to ensure creation of pedestrian friendly, transit oriented, environmentally sustainable development that are better integrated with the surrounding areas. Private open spaces of large-scale developments should have some connection or integration to the public open spaces with good management and coordination of both private and public sectors. Newer developments should create memorable places and be better linked with existing developments to create urban districts that offer a better quality of community life.

3. Key Findings

- The TKT Study area has very low local spatial accessibility potential. The evidence suggests low walkability within the districts and to its surrounding areas, as well as isolated movement near transport node.
- West Kowloon Expressway is highly accessible by vehicles, but forms a barrier severing the district from the waterfront, which is highly inaccessible by pedestrians.
- The newer developments such as Olympian City is within 10 minutes walking distance to Langham Place in Mongkok which suggests high potential for inter-neighbourhood movement but current situation is unfriendly to pedestrians.
- The large block sizes of the newer developments coupled with the lack of active frontages at street level and large motorways, pedestrian severance and the lack of legible routes hinders urban mobility and makes inter-neighbourhood movement almost impossible.
- Although the waterfront is within close proximity to new developments such as Olympian City 2 but it is physically inaccessible from the waterfront as well as the hinterland.
- The most substantial urban geometrical differences between the traditional older urban district and the newer developments is the lower number of street segments and a lack of east-west routes between Mongkok, Tai Kok Tsui and the waterfront.
- The highly accessible Argyle Street represents an opportunity to improve accessibility between Mongkok, Tai Kok Tsui and the waterfront.
- There is scope for more detailed study and spatial impact assessment in identifying improvement areas for the district and forecasting movement along the waterfront.
- There is an opportunity to better connect the hinterland with the waterfront and improve accessibility and ensure a pleasant pedestrian experience and improve the quality of life of the people, residents, workers and visitors.
- There is also an opportunity to better connect Tai Kok Tsui to the future West Kowloon District and beyond through the provision of some innovative linkages and pedestrian connections along Yau Ma Tei Typhoon Shelter that should be further explored.

4. Regional and International Case Studies

4.1 Vancouver’s Podium Developments
In the early 1990s, Vancouver’s city council rezoned most of the downtown peninsula, and the introduction of podium developments has transformed downtown Vancouver
into a vibrant, sustainable area, which is simultaneously heralded and envied by city planners across North America and around the world.

Even Hong Kong Developers in Vancouver have developed mixed use, with luxury residential development including town houses and/or retail space within the podiums, rather than creating a wall at street level. This is primarily due to their more sensitive planning and regulatory system and strong emphasis on urban design excellence. To retain pedestrian-friendly streetscapes, development blocks of smaller in size are encouraged with podiums usually only including one or a few towers per podium. Vibrant street-level focus and improved podium typology result from a proper planning, urban design panels and unique public approval system in Vancouver, which Hong Kong lacks.

4.2 Singapore’s Residential Developments and New Towns
Singapore’s Urban Renewal Authority (URA) has stringent policies on commercial, mixed use and housing developments. Housing typologies range from detached houses to high-rise luxury apartments, to ensure isolated podium developments and other undesirable building types are avoided as far as possible. Singapore’s residential development is regulated by building height and plot ratio on a broad basis, and regulations on building types are more specific, however, every year, the URA Master Plan is reviewed to allow for innovation and these are supported by district level urban design plans and clear guidelines. The URA offers incentives and formulates clear guidelines and restrictions to maintain high urban design standards.

There is strict regulation to the height of each storey, including the ground floor, making ensuring that even with podium developments street level continuity is maintained. Blank walls at street level are also forbidden, further ensuring that closed off podium and other isolated developments are not encouraged in Singapore. Required setbacks and landscaping requirements guarantee that pedestrian experience is enhanced and accounted for around residential developments.

Singapore, like Hong Kong, has invested in the construction of new towns, which have been characterized by green features and sustainable practices at an urban scale. Thereby promoting walkability within neighbourhoods, and proper linkages between community facilities and recreation areas for a better quality of life for its people. For example Clementi Town Center set to be a mixed-use podium development, including a transportation hub, is well integrated into the new town.

5.0 Lessons for Hong Kong
Smaller scale and more sensitive developments will retain the desired fine-grain urban fabric in Hong Kong and allowing for a mix of uses while better integrating with existing older urban districts. Ensuring that more sensitive development are built in the future and podium structures have a better street level interface will help to adhere to development needs whilst building on district’s unique strengths while maintaining diversity and vibrancy of Hong Kong’s celebrated cityscape.

The effects of podium developments on the urban fabric, pedestrian experience and city life as shown in Vancouver and Singapore, shows that there is room for creativity, demonstrating ways to simultaneously ensure a healthy pedestrian experience at street level and ensuring that developments are commercially viable to generate revenue. Current practice of Comprehensive Development Zones and the typical podium developments in Hong Kong pose a problem, as it often results in isolated developments that have no connection with the surrounding areas. Improved legibility and permeability with high quality public realm is only feasible with a finer grain by dividing the blocks to create streets within the developments. There should be
incentives built into regulation so that developers will be required to provide parks and other public areas to be bundled with new developments, which would result in commercially viable schemes that would also benefit the community, the district and the city.

Existing podium developments could be retrofitted to include stores at ground level covered spaces, weekend markets could fill the empty ground floor, such as at Olympian City 1, which is a massive area used only as a bus throughway. If Hong Kong podium developments included shops at street-level, those shops could include local businesses and smaller retail outlets, allowing them to offer livelihood for the locals and choice to customer and perhaps compete with the franchises in malls like Olympian City.

Fine-grain podium developments with fewer towers per podium will allow for visual permeability, where efforts should be made to allow view corridors and avenues to extend to the waterfront. Vancouver’s podium towers are tall and thin, allowing proper air circulation into the hinterland, views from the hinterland and avenues to the water, and in Singapore; different districts have different zoning requirements. The downtown waterfront is considered a protected area and therefore the buildings vary in height, with low-rise buildings at the front, promenades and parks throughout provide continuous waterfront access. The Tai Kok Tsui adjacent complexes One Silver Sea and The Long Beach both have waterfront recreation spaces, but they are disconnected and only deal with each respective site area. They should be required to connect the spaces to create a promenade, and open the areas to public use.

Two world-class cities have opposite urban planning systems, public approval per project versus comprehensive regulation, but both benefit the public sector, the private, the community and various stakeholders including visitors. Vancouver adopts a public approval system rather than an all-encompassing regulation so that development is dealt with project-by-project basis, while following a city vision, therefore creating maximum flexibility for the future of the city. City planners are able to bundle requirements with development projects to better the community at large. Singapore also adopts a project-by-project monitoring, in addition to very stringent and specific requirements, allowing for maximum innovation but geared towards maximum public benefit. Hong Kong can forge its own unique policy, planning and regulatory framework with more emphasis on urban design to uphold current values and also enhance the public realm.

To begin with, the ULI Ten Principles could be used as a guide by the Town Planning Board and set up Urban Design Panels to help assess projects before permitting future development, ensuring that urban design excellence and long term value to the city is achieved. Existing areas can be assessed to see how newer developments can be better connected to surrounding areas and older urban districts and implement Community Improvement Districts to make Hong Kong more walkable, livable and sustainable.
References

1. Community Planning Committee, 2012, Discovering Tai Kok Tsui: Community Engagement Workshop, Hong Kong Institute of Planners

Image References

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Figure 13: By Author
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