Planning and Urban Design for a Liveable High-Density City

Planning Department
October 2016

Table of Contents

List of Figures

This topical paper constitutes part of the research series under “Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030” (Hong Kong 2030+). The findings and proposals of the paper form the basis of the draft updated territorial development strategy which is set out in the Public Engagement Booklet of Hong Kong 2030+.

1 PREFACE

1.1 Hong Kong has evolved from a fishing village to an entrepôt, a manufacturing centre, and now a financial centre, a bustling metropolis and “Asia’s World City” of over seven million inhabitants [**Figure 1**]. Hong Kong has also transformed into a compact high-density city partly by necessity due to limited developable land, and partly by the conscious pursuit of integrated land use-transport-environment planning over the decades. As a compact high-density city, Hong Kong is efficient and prudent in the use of resources. Yet, there are also side-effects of high-density development needed to be addressed, such as relatively small home spaces, small working spaces, high costs of accommodation, congestion, street canyon effects, urban heat island (UHI) effects, etc.

1.2 Planning and urban design have a long history in Hong Kong. While systematic controls on building bulk and density were in place as early as the 1960s, the first attempt to encapsulate macro-scale urban design considerations into a strategic framework was the Metroplan (1991). The Metroplan recognised the unique spatial relationship between our urban form and our natural surroundings, in particular, the importance of Victoria Harbour and the Harbourfront for public amenity, as well as the protection of the scenic landscape backdrop and ridgelines that define the limits of the Metro Area. These structural considerations were further refined under the Metroplan Review (1998, 2003), which incorporated broader urban design considerations, including protection of designated strategic public views, further refinement on the ridgeline protection policy with stepped building height profiles, recognition of districts with unique built characters, and measures to improve user-friendliness in our streetscapes, etc. The last territorial development strategy, ‘Hong Kong 2030 Planning Vision and Strategy’ (2007), represented a further step forward for urban design in Hong Kong where broader and more embracing design directions to promote liveability were incorporated, *inter alia*, responsive building design, greening and air ventilation, the promotion of people-oriented streetscapes, and the fostering of sense of place and belonging within the built environment, etc. Hong Kong 2030+ will build on these foundations to further promote planning and urban design directions for a liveable, competitive and sustainable Hong Kong.

Figure 1 Hong Kong: Past and Present

1.3 Notwithstanding that Hong Kong is one of the leading global cities, our performance in terms of liveability[i] remains moderate[ii]. As shown from a comparative matrix of urban population density[iii] and liveability ranking of major cities compiled from figures from Demographia[1] and Mercer's Quality of Living Survey[2] [**Figure 2**], there is room for improving our liveability to become a leading liveable high-density city in the world. The challenge that Hong Kong faces is much greater than cities like Singapore and Seoul given our topographical constraints[iv] and limited developable land[v].

---

[i] Our performance in liveability has taken cognisance of the Mercer's Quality of Living Survey 2016, which is an annual survey derived from survey response of professionals working for multinational companies and regional specialists on a quantitative set of "quality of life determinants". The ten broad categories are political and social environment, economic environment, socio-cultural environment, medical and health consideration, schools and education, public services and transportation, natural environment, recreation, housing and consumer goods.

[ii] The major indexes are Mercer's Quality of Living Survey, Economic Intelligence Unit's Liveability Survey, and Monocle's Quality of Life Survey.

[iii] Urban density is calculated using the base year population and the reported land area provided by the relevant national statistical authorities, and, where such data is not available, by using the current year population and the land area estimates of the selected cities – Demographia (2016) *Demographia World Urban Areas 12th Annual Edition.*

[iv] Hong Kong has a land area of 1,106km^2, of which about 50% is hilly terrain with a slope gradient exceeding 20^o. About 20% of our land area is steep slopes with a slope gradient exceeding 30^o.

[v] Other major constraints to land development include natural assets, environmentally or ecologically sensitive areas, heritage sites, infrastructural constraint, etc.

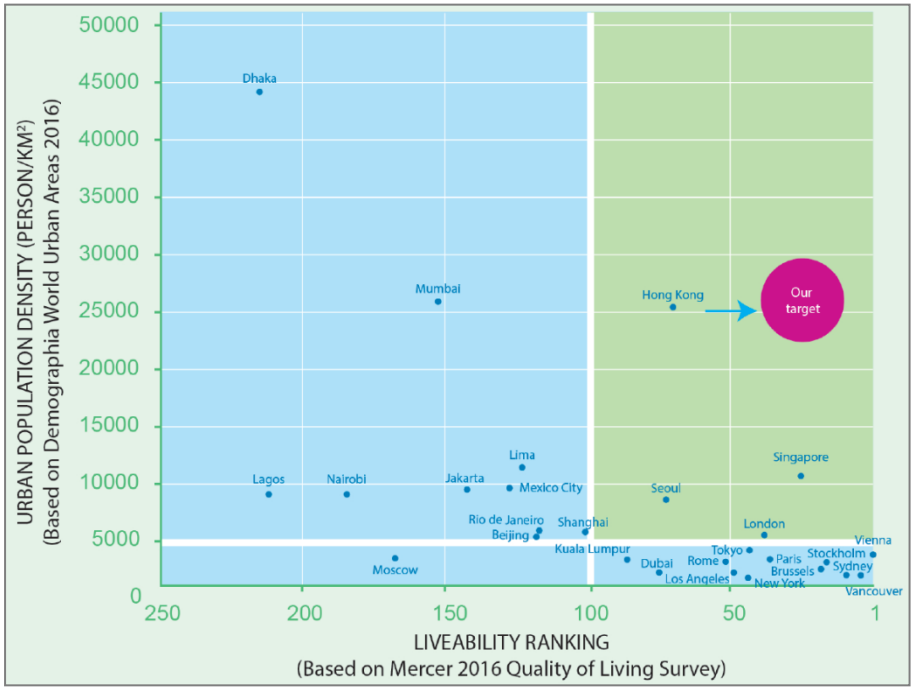


Figure 2 Comparative Liveability Matrix

1.4 This topical paper provides the research findings for identifying the key strategic directions for a liveable high-density city, which is one of the three major building blocks proposed for Hong Kong 2030+ to help Hong Kong become a liveable, competitive and sustainable "Asia's World City". The physical form and design of our city is important in making our city more liveable. "Liveability" concerns elements of a city that contribute to the quality of life and well-being of its people. The key proposed strategic directions in planning for a compact; integrated; unique, diverse and vibrant; and healthy city, together with the aspects of public space, public facilities and rejuvenating the urban fabric are discussed in the paper[vi].

> **"*Liveability* refers to those spatial, social and environmental characteristics and qualities that uniquely contribute to people's sense of personal and collective well-being and to their sense of satisfaction in being the residents of that particular settlement."**
>
> "*Habitat Agenda*" endorsed at the 1996 *"Second United Nations Conference on Human Settlements"*

Two-pronged Approach

1.5 A two-pronged approach is proposed to promote a quality built environment in the high-density context of Hong Kong, namely retrofitting the densely developed urban areas, and optimising development in new development areas (NDA) or reclamation areas, with good planning and urban design measures responsive to the needs of all. Through a two-pronged approach, we seek to preserve and enhance the positive attributes of high-density

[vi] Other aspects on "*Green and Blue Space Conceptual Framework*" and "*An Inclusive and Supportive City for All Ages*" under the "*Planning for a Liveable High-density City*" are discussed in separate topical papers.

development, while addressing and improving the less satisfactory ones.

(a) Retrofitting the densely developed urban areas

Figure 3 Retrofitting Kwun Tong Town Centre

1.6 The retrofitting approach is targeted at improving the conditions of the existing built environment in the densely developed urban areas. This essentially includes rejuvenating obsolete densely developed areas, improving connectivity, urban permeability and the urban climate, and addressing inadequacies in greenery, public space and public facilities, etc. These tasks are particularly important as a substantial portion of our population is residing within the old urban areas, which have a large and growing stock of ageing buildings [**Figure 3**].

(b) Optimising development in new development areas

1.7 The optimisation approach involves making the best of our new development areas through prudent planning and design and the effective use of land resources. In comprehensive planning for a larger area, there is greater scope to adopt best practice planning and design concepts, including compact rail-based development, a good mix of daily convenience, urban living close to nature, and smart, green and resilient districts, etc. With about one million residents expected to move into new town extensions/new development areas, optimising these areas could significantly enhance Hong Kong's liveability [**Figure 4**].

Figure 4 Optimising Development in Hung Shui Kiu NDA

1.8 This topical paper sets out to examine the following possible strategic planning directions, which are grouped under the following sections:

- **Section 2:** Planning for a Compact City;
- **Section 3:** Planning for an Integrated City;
- **Section 4:** Planning for a Unique, Diverse and Vibrant City;
- **Section 5:** Planning for a Healthy City;
- **Section 6:** Reinventing Public Space and Enhancing Public Facilities; and
- **Section 7:** Rejuvenating the Urban Fabric.

2 PLANNING FOR A COMPACT CITY

> **"*Density* measures the degree of compactness or concentration. In the context of urban form, it is commonly defined in terms of population and building density."**
>
> Greg Clark and Emily Moir (2015)
> *Density: Drivers, Dividends and Debates* [3]

2.1 The compact city form of Hong Kong can be analysed in terms of density (commonly measured by population density and building density) and land use mix[vii].

POPULATION DENSITY

2.2 Population density refers to the relationship between a physical area and the number of people who reside in that area. On a territorial scale, Hong Kong has an average population density of about 6,800 persons/km^2 in end-2015. The average population density is about 27,330 persons/km^2 if only the built-up area[viii] is accounted. As suggested by Bloomberg, "*Hong Kong is one of the densest developed cities in terms of population density and is anticipated to remain at the top in 2025*" [4].

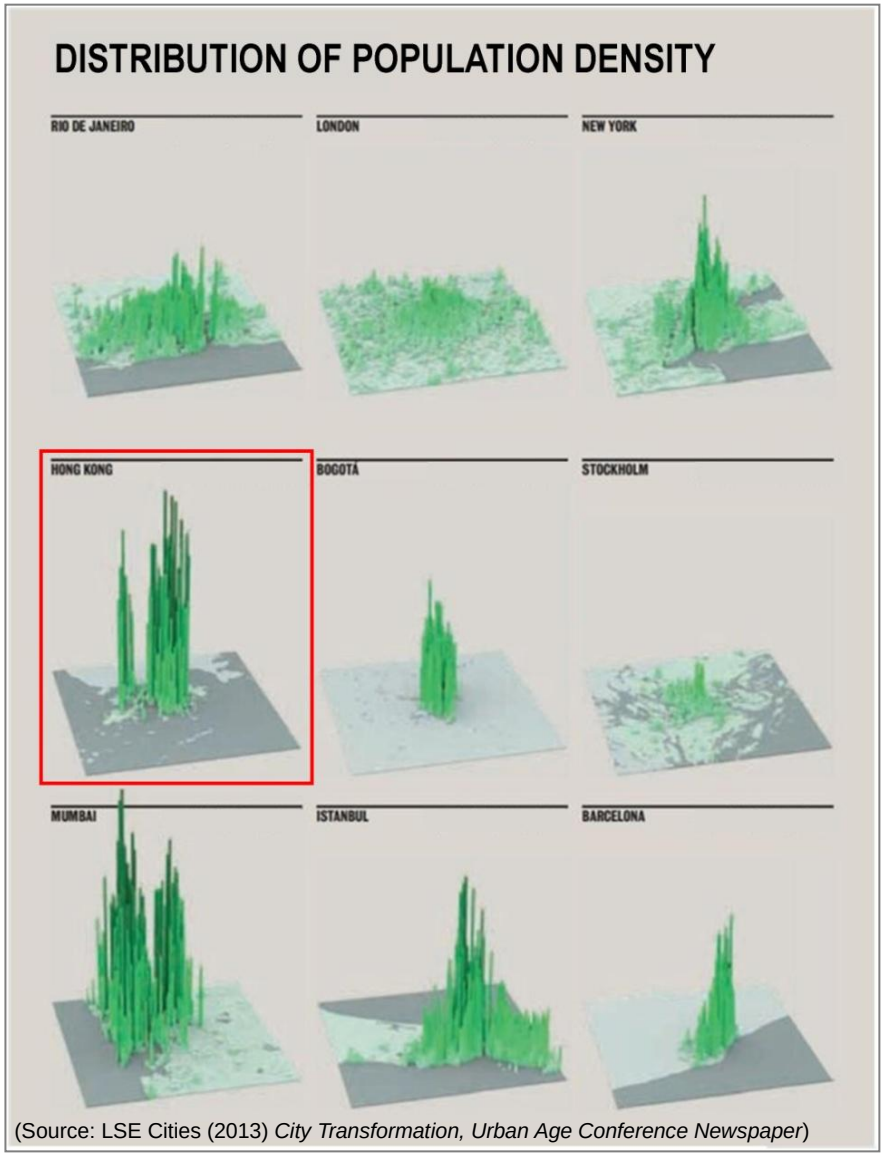
2.3 An analysis of the major liveability indexes shows that leading global cities are not necessarily the most liveable ones. The latter tends to be of medium size with a relatively lower population density such as Vienna. Nevertheless, as shown in London School of Economics (LSE) Cities' research on visualising residential density of

[vii] See Lynch, Kevin (1981) *A Theory of Good City Form*. Cambridge, MA: MIT Press; and Handy, Susan (1996) "*Methodologies for exploring the link between urban form and travel behaviour*" in Transportation Research Part D: Transport and Environment **1**. p.151–165.

[viii] Built-up area, as defined in the Land Utilisation Map prepared by the Planning Department, includes residential, commercial, industrial, institutional, open space, transportation and other formed land.

various cities [**Figure 5**], Hong Kong's population density in the built-up area is very high[5]. According to the research, *"vertical density is not only desirable but indispensable to modern megacities. In the case of Hong Kong, concentrating people, goods and services creates efficiency, conserves resources, and lowers energy consumption in terms of transportation*".

2.4 Population density varies in different parts of the territory. According to the 2011 Population Census, the most populated districts in Hong Kong were concentrated in the main urban areas, particularly Kowloon. The three densest populated districts in 2011 were Kwun Tong (about 55,200 persons/km^2), Wong Tai Sin (about 45,200 persons/km^2) and Yau Tsim Mong (about 44,000 persons/km^2) [**Figure 6**]. In terms of new towns, based on the same Census data, the most densely populated new town was Tin Shui Wai New Town (about 67,000 persons/km^2) [**Figure 7**].



(Source: LSE Cities (2013) *City Transformation, Urban Age Conference Newspaper*)

Figure 5 Visualising Population Density of Hong Kong and Other Cities[5]

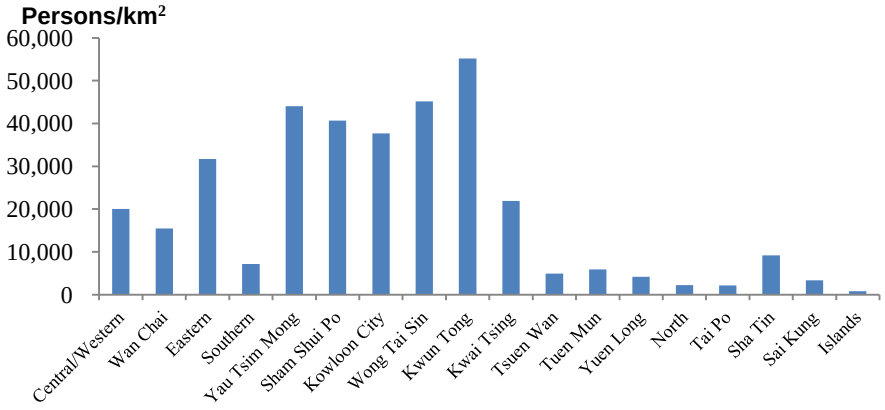


Figure 6 Population Density (Gross[ix]) by District Councils in 2011

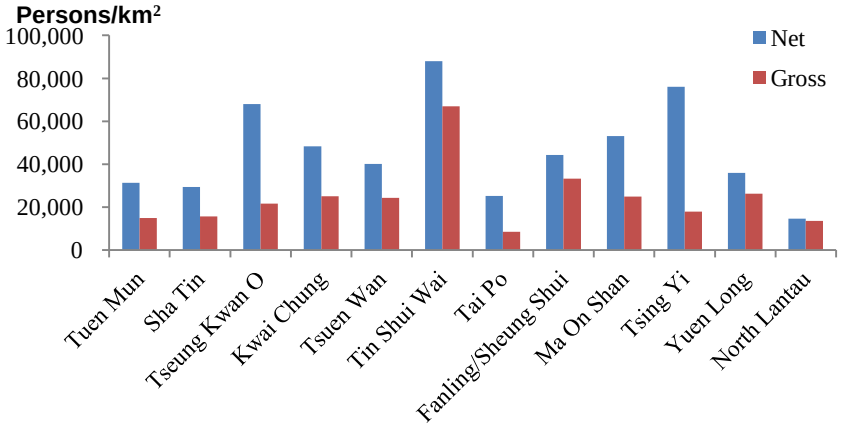


Figure 7 Population Densities (Gross and Net[x]) by New Towns in 2011

> **"*Good density* will mark out the next generation of winning cities."**
>
> Rosemary Feenan
> Director of Global Research, Jones Lang LaSalle
> Chair of Urban Land Institute Europe Policy and Practice Committee

2.5 Noting a territorial net population density[xi] of about 45,000 persons/km^2 and the dense Kowloon areas of about 54,000 persons/km^2, there should be scope for retrofitting development in some of the densely populated districts, while optimising development in some districts with relatively lower densities. This is in line with the two-pronged approach to manage density properly according to local circumstances.

BUILDING DENSITY

2.6 Building density measures the concentration of building mass in a given geographical area. It is commonly expressed as plot ratio (PR), i.e. the total gross floor area (GFA) of a building on a site divided by the total site area. Development density in Hong Kong is governed by both statutory and administrative tools. In terms of the former,

[ix] Gross population density based on the 2011 Population Census.

[x] Net density based on net development area excluding areas under major constraints (e.g. Country Parks, RAMSAR Site, Sites of Special Scientific Interests, "Conservation Area" zones, "Coastal Protection Area" zones, "Green Belt" zones, reservoirs, etc) as well as major territory-wide facilities (e.g. universities, cemeteries, military sites, industrial estates, racecourses, container terminals, landfills, etc).

[xi] The territorial net population density for 2011 has taken into account Hong Kong Island, Kowloon and the New Towns only.

statutory tools prescribing density limit include statutory town plans prepared under the Town Planning Ordinance, whereby planning control is exercised through the planning permission and zoning/ rezoning regimes and Schedule 1 of the Building (Planning) Regulations (B(P)R). In terms of administrative tools, development density can also be imposed through new leases, and in existing land leases where opportunities arise, such as applications of lease modification or land exchange made by landowners. Chapter 2 of the Hong Kong Planning Standards and Guidelines (HKPSG) also sets out administrative density guidelines for references.

2.7 While there is a trend for governments of many other cities to aim for densification, the case for Hong Kong is unique. Some parts of our urban areas are already considered overcrowded and overbuilt, and in need of retrofitting, whereas some developed lands could be optimised in terms of building density. It is therefore necessary to strike a balance between providing adequate development floorspace through densification and ensuring a liveable environment through density management, taking due consideration of local constraints, environmental impacts and public aspirations, etc.

2.8 While the broad density guidelines in Hong Kong have been adjusted from time to time, in general, most sites on Hong Kong Island have a maximum domestic PR of 8, 9 or 10, while those in Kowloon usually have a lower maximum domestic PR of 7.5. In new towns, the maximum domestic/ non-domestic PR is usually set at 5/ 9.5, with the total maximum PR calculated according to the composite formula.

2.9 The most immediate and effective way to augment housing land supply in the short to medium term is to optimise the use of the developed areas in the existing urban areas and new towns, as well as nearby land in the vicinity of existing infrastructure, through land use reviews and increasing development intensity where planning terms permit. As set out in the 2014 Policy Address, *"the Government considers it feasible to generally increase the maximum domestic PR currently permitted for the other "density zones" in the territory (i.e. except for the north of Hong Kong Island and Kowloon Peninsula, which are more densely populated) by around 20% as appropriate"*. In the 2015 Policy Address, it was stated that *"appropriate development intensity will also be increased to optimise land use"*. Any increase in development intensity of individual housing sites should be considered and tested in planning terms, subject to

the relevant development restrictions and provision for planning permission of the Town Planning Board (TPB) under the statutory planning mechanisms. The maximum domestic PRs for sites located in the various density zones of the main urban areas and New Territories taking on board the initiatives are included in Chapter 2 of the HKPSG[xii].

Key Considerations in Managing Density

2.10 A compact city is commonly considered a sustainable and efficient form of development[xiii]. It provides convenience to its dwellers, reduces unnecessary travels and prevents urban sprawl. The high concentration of people, goods and services can reduce land take and greenhouse gas (GHG) emissions, minimise carbon footprint, create economies of scale, facilitate exchange of information and ideas, spur innovation and contribute to the vibrancy of the city. Hong Kong is successful in this respect.

2.11 On the other hand, high-density development pattern is often blamed for such undesirable externalities as overcrowding, traffic congestion, inadequate infrastructure, UHI effect, poor air ventilation, visual impact, stress, etc. It is therefore important to understand the general principles relating to density and advocate the best practices to manage it. The key considerations in managing density are:

(a) higher population densities, especially coupled with better home-job balance, are strongly correlated with lower GHG emissions due to lesser travel needs and increased transport efficiency. Contrarily, lower densities increases the average travel distances;

(b) higher population densities can create necessary threshold for mass transit alternatives to enable compact transit-oriented development (TOD);

[xii] Chapter 2 of the HKPSG on "Residential Densities" sets out the following density principles for the Main Urban Areas: (a) within acceptable environmental limits, to maximise the intensity of people and jobs close to high capacity transport systems (particularly rail); (b) to limit densities in areas not well served by high capacity transport systems; (c) wherever possible, to reduce densities in highly congested districts which are experiencing widespread environmental and operational problems; and (d) to limit densities in areas where the visual impact of development will be the prime concern. The chapter also sets out that the maximum permitted domestic PR for Residential Density Zone 1 in most existing New Towns should be optimised and increased generally from 5 to 6, where infrastructural capacity and planning terms permit. In NDAs, the maximum domestic PR is 6.5, which is lower than the statutory limit set by the B(P)R in order to bring about improvements in living quality by reducing densities. The chapter states that the maximum PRs in the relevant Density Zones should not be considered as an automatic and across-the-board specification, but a general guidance for the maximum PR to be considered or tested for individual sites for residential development in the planning process where there is scope to allow such an increase in terms of infrastructure capacity and planning considerations, that is, where planning terms permit.

[xiii] Compact city development is considered sustainable at The United Nations Rio+20 Conference, and in studies such as the LSE Cities' study on "*Going Green: How Cities are Leading the Next Economy*", published in 2013.

(c) presence of green spaces, spatial/visual relief (such as Government, Institution or Community (G/IC) sites with densities lower than surrounding residential or commercial developments) and satisfactory urban climate make people in a higher density neighbourhood more satisfied with their locality. Likewise, it is important to adopt responsive three-dimensional urban design principles, such as building height gradation, density differentials, open space and green-blue networks, etc, to create a more liveable environment;

(d) building densities could be optimised through innovative means, such as by optimising the use of underground space and topside development; and

(e) the same level of density can be achieved through multiple land use configurations. While population density is strongly correlated with building density, high building density does not necessarily imply high-rises. The population density also depends on the balance between the building density and the surrounding public spaces.

Building Form and Density

Medium-rise urban areas with a high building footprint ratio can have a comparable built density as high-rise urban areas with a low building footprint [**Figure 8**].

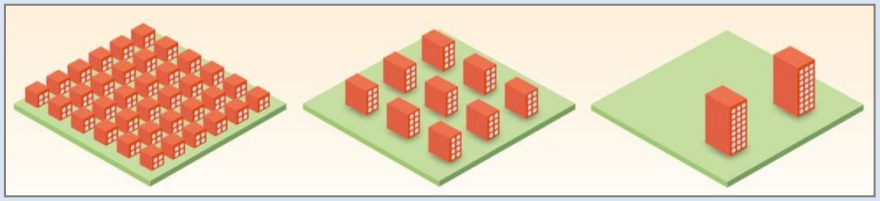


Figure 8 Same Density in Different Urban Forms[6]

An investigation of different urban forms in Paris and Hong Kong has indicated that high-rise building developments are not necessarily denser than medium-rise developments[7]. For instance, a Parisian “Haussmannian” district of 6-7 stories was found to be denser than a 20-storey building neighbourhood in Hong Kong over the same land area [**Figure 9**].

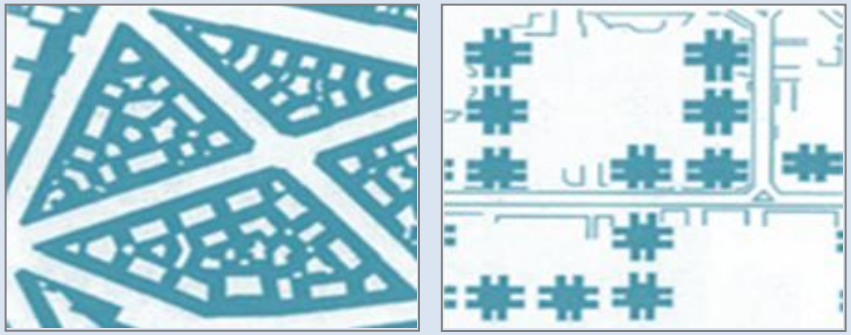


Figure 9 Building Forms in Paris (left) and Hong Kong (right)[7]

In comparing the ratio of floor area to land area of the two sampled areas, the density in Paris of 5.75 was in fact higher than that of Hong Kong (at 4.32). This shows that compactness can be achieved using different building forms and that density need not necessarily mean high-rise buildings. It is important for cities aiming to create a compact city to have a certain degree of flexibility in the choice of urban form that suits the local context best.

LAND USE MIX

2.12 Land use mix denotes the diversity and integration of land uses at a given scale. Horizontal and vertical mixed uses are prevalent in the built-up areas of Hong Kong, especially along mass transit lines. An adequate threshold population is required to support sufficient and diverse commercial and community facilities. A business node needs a critical mass of commercial floorspace and a mix of commercial and supporting uses for efficient operation and synergy. In the urban areas and new towns, residential land uses are always well mixed with compatible land uses including commercial uses, community facilities, and non-polluting employment uses, etc, offering convenient living.

2.13 Traditional zoning systems tend to restrict mixed land uses as they were originally intended to avoid negative externalities due to incompatible land use interface. This approach remains generally relevant to particular land uses interfaces, such as between polluting industrial/ residential interface. Nevertheless, it has been increasingly recognised that single-use zoning is less conducive to diversity and accessibility to a variety of local services and jobs within walking distance, as well as creating synergy in a mixed use setting[8]. In Hong Kong, mixed use zoning has been introduced to promote compatible and synergetic mixed uses.

Land Use Zonings allowing Mixed Uses

"Residential (Group A)" ("R(A)"): this zoning is primarily intended for high-density residential developments, though commercial uses are always permitted on the lowest three floors of a building. This helps create vitality and diversity in an area and provide flexibility for mixed use development to meet changing needs of the neighbourhood. For example, retail frontage/ shopping podium are common in "R(A)" zones. Co-working spaces can also be accommodated in the lowest three floors of a building under "R(A)" zoning.

"Comprehensive Development Area": this zoning is intended for comprehensive development/ redevelopment of the area for residential and/or commercial uses with the provision of open space and other supporting facilities. The zoning is to facilitate appropriate planning control over the development mix, scale, design and layout of development, taking account of various environmental, traffic, infrastructure and other constraints.

"Other Specified Uses (Business)" ("OU(B)") : this zoning allows more flexibility in the use of existing industrial and industrial-office (I-O) buildings as well as in the development of new buildings for both commercial and clean industrial uses. A mix of non-polluting industrial, office and other commercial uses are permitted as of right in new development of business buildings or conversion of existing industrial building on application to the TPB. Due to safety and environmental concerns, only less fire hazard-prone office use not involving direct provision of customer services or goods to the general public will be permitted in existing industrial and I-O buildings within an "OU(B)" zone.

"Other Specified Uses (Mixed Use)" ("OU(MU)"): this zoning is intended primarily for mixed non-industrial land uses. Flexibility for the development/ redevelopment/ conversion of residential or other uses, or a combination of various types of compatible uses including commercial, residential, educational, cultural, and recreational and entertainment uses, either vertically within a building or horizontally over a spatial area, is allowed to meet changing market needs. Physical segregation has to be provided between the non-residential and residential elements to prevent non-residential uses from causing

nuisance to the residents. Business centres or office use in the "OU(MU)" zone can be provided in a vertically mixed-use manner, i.e. on different separate storeys. "OU(MU)" sites are found in Wan Chai, Causeway Bay, and proposed in Kai Tak and Kwu Tung North NDA.

Key Considerations for Land Use Mix

2.14 Land use mix has different implications on various scales:

(a) ***City scale***: a good mix of employment uses and other commercial uses are essential for a business or employment node. The proximity of housing to workplaces and major government, institution or community facilities can help reduce commuting trips;

(b) ***Neighbourhood scale***: compatible land uses should be mixed smartly to help reduce non-work trips and travel needs outside the neighbourhood. The presence of neighbourhood commercial centre or shopping streets could also bring vibrancy to a community and encourage social interactions. This could be further aided by a fine-grain street pattern and/or underground pedestrian networks that promotes walking; and

(c) ***Building scale***: intermixing housing and live-work spaces with small-scale businesses, offices, workshops and studios can increase vitality and provide convenience.

PLANNING FOR A COMPACT CITY: KEY STRATEGIC DIRECTIONS AND ACTIONS

2.15 To capitalise on the merits of compact development, we propose to continue to underscore a compact development model with railway as the backbone of the public transport system, complemented by other modes of public transport and good pedestrian and cycle networks. The crux is to manage density properly, striking an appropriate balance between adequate housing and other land supply through optimisation while ensuring a liveable environment. We also seek to promote efficient use of urban spaces by innovative means, compatible development at various levels, as well as responsive and three-dimensional urban design concepts to create a quality living environment.

2.16 The key strategic directions and actions for planning a

compact city are highlighted below:

Key Strategic Directions	Key Actions
Managing density	• to adopt a two-pronged approach: retrofit the densely developed urban areas and achieve an optimal density in new development areas
Promoting compatible land use mix	• to promote compatible land use mix through responsive land use planning
Fostering efficient use of urban spaces	• to unlock development potential through innovative use of land, especially underground spaces
Adopting responsive urban design concepts	• to use relevant urban design concepts such as building height gradation, density differentials, open spaces and green-blue networks to create a liveable high-density urban environment
Underscoring compact development	• to underscore transit-oriented, compact development with railway as the backbone of the public transport system

How could Densely Developed Areas be Retrofited?

Urban regeneration: to identify dilapidated and vulnerable urban areas for regeneration.

Urban park and public space: to increase open spaces for leisure and recreation, and to provide more public space to supplement the relatively small living space.

Urban ecological restoration: to promote urban forestry, recreational farming and community garden opportunities, to foster sustainable co-existence of city with nature, and to expand green streets and other urban greenery.

Planning for better urban climate and UHI mitigation: to develop and implement area-specific mitigation strategies for areas most impacted by the UHI effect, e.g. measures recommended on the provision of greenery, building permeability, air paths/breezeways and other suggestions set out in the “Urban Climatic Map and Standards for Wind Environment – Feasibility Study” (UCM Study).

3 PLANNING FOR AN INTEGRATED CITY

3.1 Cities function like ecosystems where different components are inter-related both physically and functionally [**Figure 10**]. Planning for an integrated city is not only about integrating the land use, transport and environmental considerations. The notion of "integration" also embraces connectivity and easy access to workplaces, businesses, public amenities, neighbourhood facilities, recreational opportunities, nature, etc. Central to this notion is to enhance urban mobility and to promote physical and functional integration.

URBAN MOBILITY

3.2 The Urban Mobility Index 2014 has ranked Hong Kong as the best city in terms of urban mobility[9]. This was largely attributed to the high percentage of public transport in the modal split[xiv], the relatively low number of vehicles per capita, prevalent smart card penetration, low level of transport-related emissions per capita, low rate of traffic-related deaths and a respectable mean travel time to work given its population density.

Figure 10 Hong Kong as an Integrated City

3.3 To enhance urban mobility in our high density city, key actions to promote connectivity, walkability, cyclability, accessibility and permeability are proposed.

CONNECTIVITY

Spatial Connectivity

[xiv] Every day, about 12.6 million passenger trips (or 90% of all passenger trips) are made on our public transport system which includes railways, buses, minibuses, trams, taxis and ferries (end-December 2015 figures).

3.4 The urban areas of Hong Kong are embraced by the surrounding rural areas and countryside. The Metro Area flanking Victoria Harbour is bestowed with harbour view and harbourfront amenities. To further promote liveability, the connectivity within the urban area and with the surrounding rural areas, countryside and harbourfront should be enhanced. More detailed discussions on this aspect could be found in the *"Green and Blue Space Conceptual Framework*" topical paper.

Transport Connectivity

3.5 Railway is the backbone of the land use and transport system in Hong Kong [**Figure 11**]. Our railway system is heavily patronised, with railway accounting for about 41% of domestic public transport and 55% of land-based cross-boundary passenger trips by end 2015[10]. This strong reliance on railways has helped reduce pressures on our road network and in turn helped enhance roadside air quality in the urban areas.

3.6 Hong Kong has been adopting a TOD model for several decades. Currently, about 77% of our commercial and office GFA and 45% of our living quarters are located within 500m of a rail station[xv]. These percentages will further increase upon completion of the seven new railway projects under the Rail Development Strategy (RDS) 2014[xvi] [**Figure12**]. A similar TOD development model with a focus on green mobility will also be adopted in planning the NDAs, such as the Hung Shui Kiu (HSK) NDA.

Figure 11 Railway as the Backbone of the Public Transport System

[xv] Based on the Planning Department's geographic information system (GIS) assessment.

[xvi] Having regard to transport demand, cost-effectiveness and new development needs, the RDS 2014 has recommended the development of seven new railway projects within the planning horizon up to 2031, including the Northern Link and Kwu Tung Station, the Tuen Mun South Extension, the East Kowloon Line, the Tung Chung West Extension, Hung Shui Kiu Station, the South Island Line (West) and the North Island Line. Upon completion, the total length of the railways will extend from 270km in 2021 to over 300km by 2031.

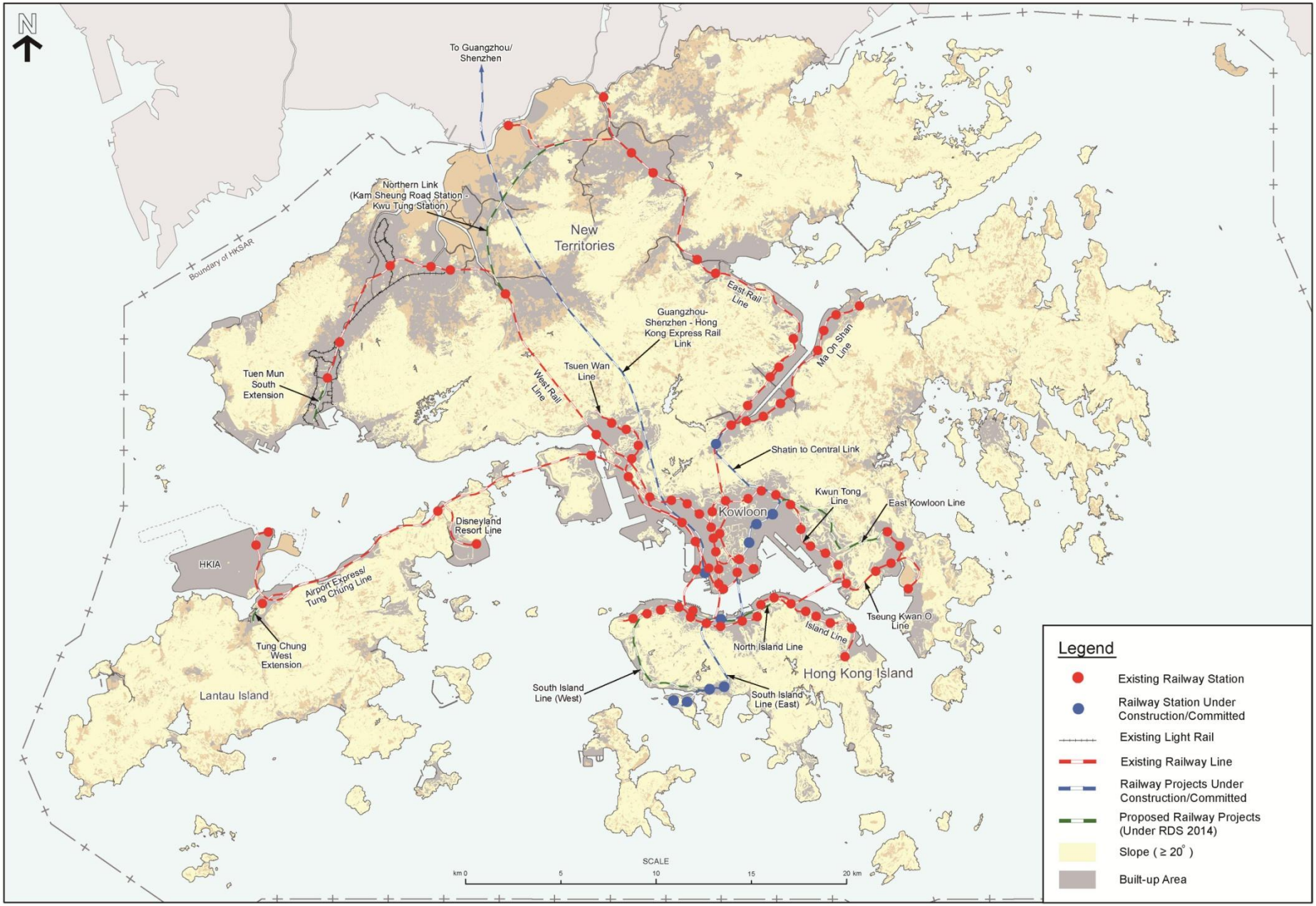


Figure 12 Existing / Proposed Railway Development Projects in Hong Kong

Hung Shui Kiu New Development Area:

Green Mobility and Walkability

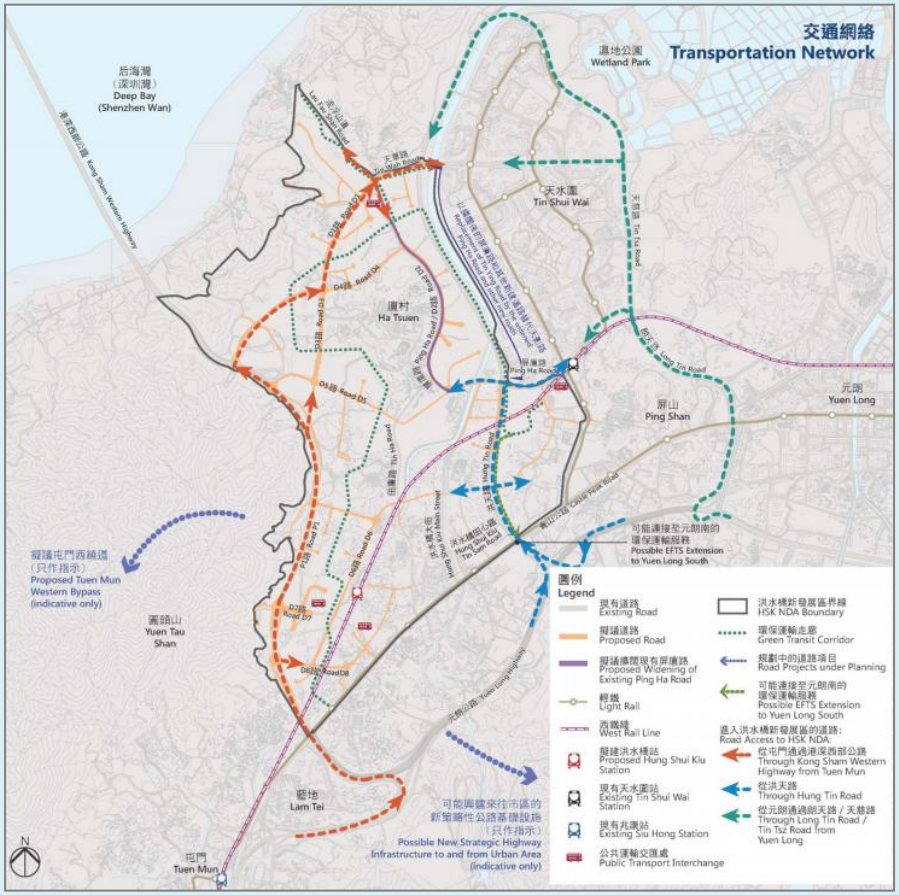


Figure 13 Proposed and Existing Transport Network at HSK NDA

- In terms of external connectivity, the proposed West Rail HSK Station and the existing West Rail Tin Shui Wai Station will connect HSK NDA with the main urban areas through mass transit. Key commercial activities and higher density residential developments will be concentrated within walking distance of rail stations. Possible new strategic highway infrastructure project(s) connecting the Northwest New Territories with the urban areas will also be examined to cope with the increasing traffic demand.

- In terms of internal connectivity, a comprehensive green transport network, including a green transit corridor with environmentally friendly transport service, cycle tracks, pedestrian walkways and pedestrian streets will be provided [**Figure 13**]. The majority of the new population and employment will be concentrated within walking distance of a public transport node.

- A comprehensive cycle track and pedestrian walkway network will be provided in the HSK NDA for leisure and everyday commuting. Pedestrian walkways will integrate with the open space and amenity area systems to create a pleasant pedestrian environment.

3.7 Roads in Hong Kong are among the most heavily used in the world, with over 737,000 vehicles on 2,101 km of roads as at June 2016[11]. To further enhance urban mobility within Hong Kong, new projects such as the Central-Wan Chai Bypass and Island Eastern Corridor Link, the Tuen Mun-Chek Lap Kok Link (TM-CLKL), the Tseung Kwan O-Lam Tin Tunnel and the Cross Bay Link, and various improvement works to major highways are currently underway. To facilitate cross-boundary traffic, the Hong Kong-Zhuhai-Macao Bridge (HZMB) is also under construction. Together with the Hong Kong Link Road and the TM-CLKL, it will form a strategic road network connecting Hong Kong, Macao and Zhuhai. The new Liantang/Heung Yuen Wai Boundary Control Point and a connecting road are also under construction.

3.8 In view of the finite road space and overcrowding conditions, continuous car growth at the current average rate of 3% per annum (2005-2015) is not sustainable. Looking ahead, we propose to support mass transit with better pedestrian connection for a low-carbon first/last mile trip and feeder services for seamless connectivity and better use of mass transit. Multi-layered pedestrian networks, comprising at-grade pedestrian linkages, and grade-separated and all-weather footbridges and subways should be promoted, especially connecting to and from the mass transit stations. The Central and Mid-Levels Escalator and Walkway System, consisting of covered walkways, escalators and travellators connecting the Central/Hong Kong MTR Station, is a showcase of a comprehensive pedestrian network for promoting walkability in the Central Business District (CBD) and the Mid-Levels [**Figure 14**].

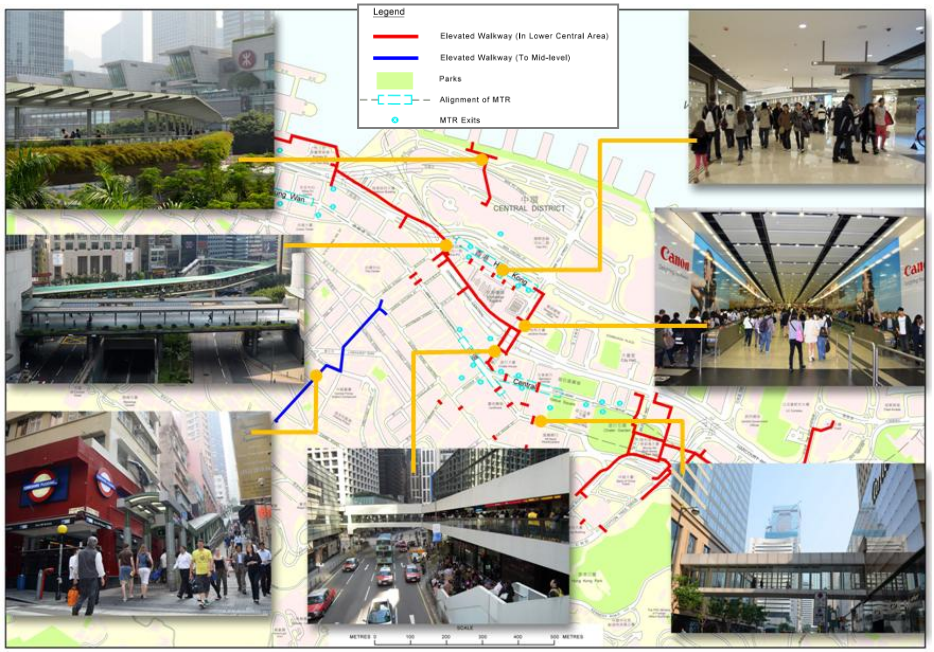


Figure 14 Central and Mid-Levels Escalator and Walkway System

Smart Mobility

3.9 Hong Kong can also capitalise on innovative and technological advancement in information and

communications technology (ICT) and big data to ease traffic congestion, to inform route choices and enhance the travelling experiences of road users and pedestrians. As a strategic direction, we need to promote smart travel choices and to support multi-modal public transport services by providing road users and pedestrians with better and integrated travel information.

WALKABILITY

> **"[People] cross streets where it is most natural for them, avoid detours, obstacles, stairs and steps, and prefer direct lines of *walking* everywhere."**
>
> Jan Gehl (2010)
> *Cities for People*[12]

3.10 Walkability is a key element for sustainable cities. A comprehensive development of an integrated walkway system can help reduce the public's reliance on road-based transport, which in turn alleviates the demands put on the transport system and lessens the impact on the environment. Providing meticulously planned integrated walkway systems and pedestrian streets, particularly in NDAs, can reduce the number of short motorised trips and the conflict between pedestrians and vehicles. This will increase mobility, enhance road safety and improve local air quality, contributing positively to smart city development.

3.11 Walking is a form of physical activity that has proven to yield health and social benefits[13]. Planning and urban design measures can help create a safe, inviting and accessible walking environment, which are the preconditions for promoting walkability. In this regard, the Energizing Kowloon East Office has recently commissioned various studies related to walkability and better pedestrian environments.

3.12 Despite extant efforts to enhance walkability in the territory, there is still room to make further improvement to rise to the challenge of future development, especially in some congested urban areas where the cluttering of obstacles such as unsightly utility structures, narrow pavements, and frequent level changes along pedestrian routes, etc have yet to be harnessed [**Figure 15**]. With underground space developments becoming more prevalent in the future, the holistic planning of underground pedestrian networks would also need to be carefully considered.

Figure 15 Less Than Desirable Walking Environments in Hong Kong

Walkable Street Plans

3.13 Looking ahead, we should embrace the concept of walkability in the planning and design of the built environment and pedestrian networks and to identify pilot areas to promote walkable streets. Opportunities should be taken to incorporate walkable street plans as part of a district-wide urban design plan to enhance the pedestrian environment in a people-oriented manner, with emphasis on the provision of pavement with sufficient effective width, more greenery, sufficient public seating at appropriate locations, more enriching pedestrian experiences, minimisation and coherent management of utility installations, signage and other pedestrian obstacles, coordination of pedestrian desire lines, and formulation of a coherent way-finding strategy, etc. Building on the foundations of the "Study on Planning for Pedestrians"[xvii], we should revisit areas with high pedestrian patronage for enhancing walkability.

Pedestrian Comfort and Health

3.14 As a sub-tropical city, it is not uncommon to experience the clashing of umbrellas on narrow pavements on rainy days, or the blazing sunlight when navigating the streets of Hong Kong. To enhance pedestrian comfort, opportunities should be taken to erect shelters along key pedestrian routes, especially in the vicinity of mass transit nodes to encourage people to cover their first/last mile by walking. Low emission zones or vehicle-free pedestrian zones (e.g. station precincts) should also be explored in the congested built-up areas subject to heavy roadside

[xvii] Commissioned in 2001, the Study on Planning for Pedestrians had the objective to formulate a broad planning and development framework setting out guidelines and standards for more effective and comprehensive planning for pedestrians at different levels of planning, based on which conceptual Pedestrian Plans would be prepared for application and assessment of broad impacts and implementation mechanisms of the pedestrian planning proposals. A Pedestrian Plan for Causeway Bay was formulated as a result of the study which would be pursued in the long-term.

pollution so as to improve the air quality of the pedestrian environment.

The Walk2Ride Programme, Singapore

The Walk2Ride Programme (the Programme) was launched by the Land Transport Authority (LTA) of Singapore in January 2013 with the aim of enhancing walkability between mass transit stations and residences and major public services/ amenities [**Figure 16**]. Under the Programme, the LTA intends to construct over 200km of sheltered walkways (over four times more than the 46km in 2014) within a 400m radius of all Mass Rapid Transit (MRT) stations and within a 200m radius of all Light Rail Transit (LRT) stations and bus interchanges by 2018[14].

Figure 16 Photomontage of Sheltered Walkway under the Programme

CYCLABILITY

3.15 Cycling can bring health, social and environmental benefits to urban living. There has been a policy shift to inner-city cycling in many world cities, where cycling is reclaiming its place as a viable transport mode. For the case of Hong Kong, roads, especially those in the urban area, are usually narrow and crowded. Due to road safety considerations, the Government does not encourage the use of bicycle as a transport mode in the urban areas. However, the Government endeavours to foster a bicycle-friendly environment in new towns and NDAs[15]. The approximately 100km-long New Territories Cycle Track Network currently under construction in phases will connect Tsuen Wan with Ma On Shan via most of the New Territories [**Figure 17**].

3.16 Other initiatives to promote inner-city cycling could also be explored. For instance, the potential cycle track along the northern shore of Hong Kong Island with ancillary facilities could serve as a pilot to gauge the cost-benefit and popularity of inner-city cycling and facilitate cycling for leisure and recreational purpose as part of the harbourfront enhancement initiatives. In a large scale urban development like Kai Tak, cycle track networks and associated ancillary facilities are being planned to serve leisure and recreation purposes.

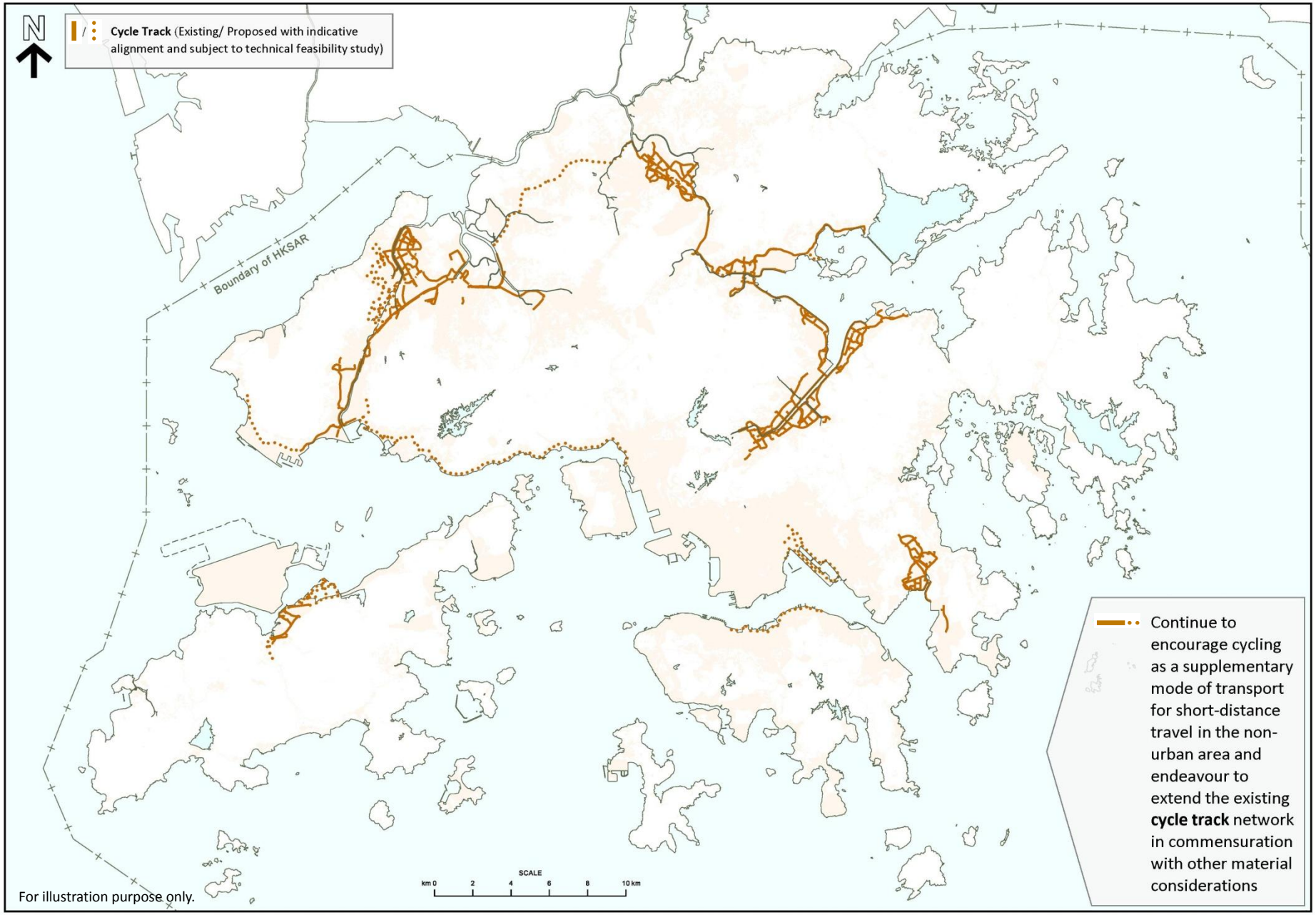


Figure 17 Existing / Proposed Cycle Tracks in Hong Kong[16]

Opportunity for further extending the network to enhance accessibility and connectivity to facilitate short-distance commuting would also be explored and examined. Concurrent reviews could also be conducted on the bicycle carriage arrangement on public transport, as well as public bicycles for hire initiatives to encourage cycling. In contrast to the urban areas, the conditions for cycling for short-distance commuting and long-haul recreation are more favourable in the New Territories [**Figure 18**].

Figure 18 Cycling in the New Territories

ACCESSIBILITY

3.17 The HKPSG currently prescribes that local open spaces (LO) should be located within short walking distance from the residents it intends to serve, preferably within a radius of not more than about 400m. Moreover, railway stations/ public transport interchanges should preferably be located within a walking distance of 500m from major housing, employment, shopping, commercial, cultural and other activity centres with properly planned pedestrian walkway systems to improve connectivity. Such administrative guidance has since been translated into development plans to facilitate ease of access for residents to a range of public services (e.g. educational, medical and health), and community and social welfare facilities. For example, in Tseung Kwan O New Town, most of the neighbourhood facilities are located within 500m of railway station(s), upon which residential and commercial developments are clustered [**Figure 19**].

3.18 As a strategic direction, a conceptual framework of accessibility is proposed to promote accessibility to live, work and leisure pursuits. It is proposed to promote easy access to public transport, public amenities, neighbourhood facilities, jobs, recreational opportunities, etc [**Figure 20**]. Major housing and employment clusters should be located within a walking distance of

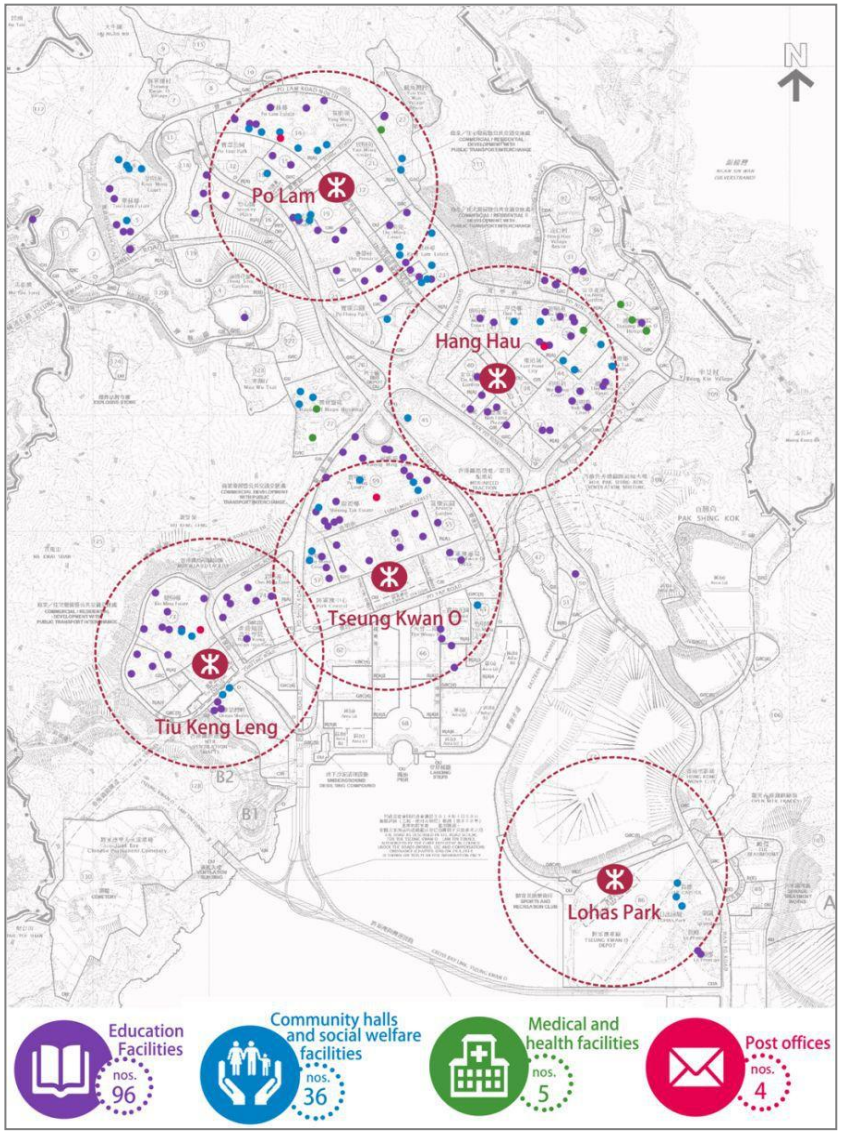


Figure 19 Accessibility of Neighbourhood Amenities in Tseung Kwan O

500m from railway stations, neighbourhood community, retail and educational facilities, and 200-300m from public transport nodes[xviii]. As for local open spaces, these should be located within a reachable walking distance of no more than 400m from homes. Further afield, homes should also be positioned within 3km of a country park(s).

Figure 20 A Conceptual Framework of Accessibility

[xviii] Currently a walking distance of 300m between homes/jobs and road-based public transport interchanges has been adopted for NDAs.

3.19 Radial distances are less relevant when more qualitative human-oriented design considerations of time, walkability and user perception are involved[xix]. There have been growing calls in the field of urban design to plan for different land uses under a nodal concept of walkable thresholds from the targeted users through walkability studies emphasising actual accessibility and walking time[17] [**Figure 21**]. As a strategic direction, we should gradually and systematically conduct walkability studies to identify ways to enhance walkability and connectivity, and further extend the walkable threshold to and from key urban nodes, through urban design plans.

3.20 For instance, a walkability study for a school may reveal the presence of areas susceptible to pedestrian-vehicle conflicts where school children may become vulnerable, while a similar study may identify the lack of barrier-free access or public seating in the walkable threshold of an elderly community centre – both of which could reveal the need for retrofitting and remedial works to be conducted under the respective urban design plans.

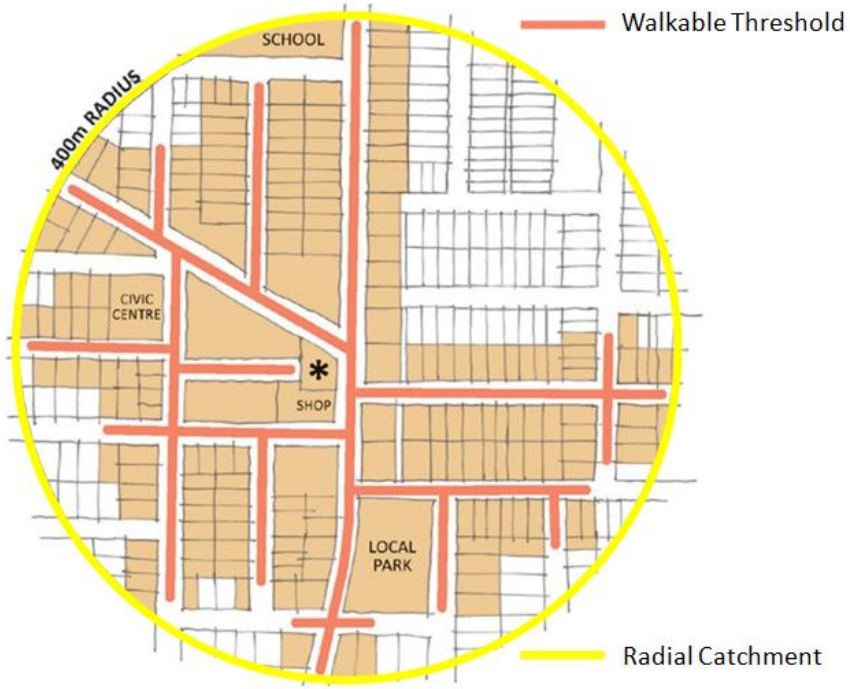


Figure 21 Radial Catchment against Walkable Threshold [Adapted from 17]

The 'Safe Streets for Seniors' Initiative, New York City

With the aim of reducing senior pedestrian fatalities and casualties, the 'Safe Streets for Seniors' initiative was launched in New York City in 2008 [**Figure 22**]. The initiative began by studying crash data to determine clusters of pedestrian-vehicle accidents involving elderly pedestrians, leading to the identification of 25 Senior Pedestrian Focus Areas, in which street improvements were implemented to enhance pedestrian safety. Since 2009, over 130

[xix] While 500m is broadly equivalent to 6-7 minutes in normal walking speed on flat land and under uninterrupted conditions, physically-speaking, it is often impossible to cover a distance of 500m within 7 minutes in the highly-developed context of Hong Kong. From a humanistic perspective, it is thus useful to realign our concept of accessibility in terms of qualitative walking time as opposed to quantitative walking distance in the long run.

improvement projects have been implemented, resulting in a 10% decrease in annual senior pedestrian fatalities citywide with 2015 being the lowest year on record for pedestrian fatalities in New York City.

Figure 22 Safe Streets for Seniors' Initiative, New York City

PERMEABILITY

3.21 The permeability of the urban environment is a good measure of pedestrian connectivity. Fine urban grains and permeable street networks can shorten travel distances, promote convenience and walking, reduce vehicular movement, improve connectivity and proximity, promote vibrant street life and improve air ventilation of the urban environment [**Figure 23**].

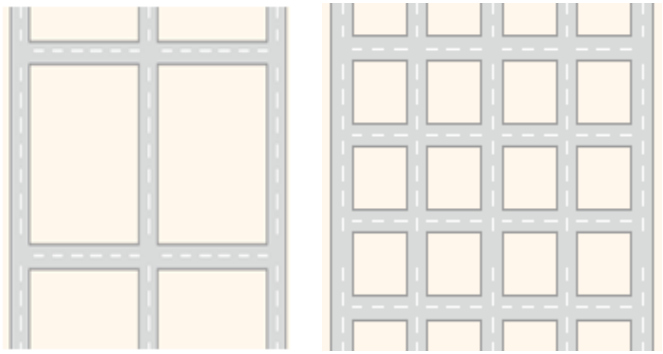


Figure 23 Street Patterns of Low and High Permeability

3.22 In the older urban areas of Hong Kong, street design is often based on fine urban grain; the resultant townscape encourages connectivity, diversity and vibrancy. On the other hand, in recently developed areas, the urban form is characterised by superblocks surrounded by large distributor roads, which tends to discourage walking, lessen the accessibility of the area, and discourage at-grade economic and social activities[18]. As a strategic direction, large impermeable urban blocks (e.g. exceeding 100m in length) shoud be avoided as far as possible. Instead, human scale and fine-grain street grids should be promoted.

PLANNING FOR AN INTEGRATED CITY: KEY STRATEGIC DIRECTIONS AND ACTIONS

3.23 The key strategic directions and actions for planning an integrated city are highlighted below:

Key Strategic Directions	Key Actions
Promoting physical and functional integration	**Connectivity:** • to enhance connectivity within the urban areas and with the surrounding rural areas, countryside and harbourfront • to support mass transit with better pedestrian and feeder connections for seamless connectivity and better use of mass transit • to promote smart travel choices by providing better information to pedestrians and road users
	Walkability: • to embrace the concept of walkability in the planning and design of the built environment and pedestrian networks • to identify schemes to promote walkable streets
	Cyclability: • to foster a "bicycle-friendly" environment in new towns and new development areas through smart and innovative measures
	Accessibility: • to pursue the conceptual framework of accessibility to promote easy access to public transport, public amenities, neighbourhood facilities, jobs, recreational opportunities, nature, etc
	Permeability: • to enhance permeability of the urban fabric and promote human-scale and fine-grain street grids

4 PLANNING FOR A UNIQUE, DIVERSE AND VIBRANT CITY

4.1 Our city is a diversity of economic and social activities. It is our home to live, work and enjoy life, while at the same time a popular destination for tourists and visitors. In a glimpse, our cityscape is not only compact and vibrant, but also embraces treasurable natural assets – Victoria Harbour, undulating ridgelines, luxuriant country parks, and a variety of green and blue spaces, etc. In addition, our built heritage in different parts of the territory symbolises our historical past and cultural identity, whilst revealing our aesthetic values, social beliefs, traditions, ideas and cultures at different times. Similarly, from Cantopop and action films to Cantonese opera` and pop art, the city's culture has long been embodied in our music, films, performing arts, food and beverages, and other art forms, drawing visitors from afar and forming an integral part of our unique and diverse city image.

4.2 In an increasingly globalised world, city identity has become paramount in distinguishing world cities from one another and in city branding and marketing[19]. The search for city uniqueness has coincided with the call for place-making to define and promote the distinctiveness of places. In short, uniqueness, diversity and vibrancy are the hallmarks of the Hong Kong image, which shall be respected and cherished.

UNIQUENESS

> **"*Imageability*…that quality in a physical object which gives it a high probability of evoking a strong image in any given observer."**
>
> Kevin Lynch (1960) *The Image of the City*[20]

4.3 The imageability or legibility of a place is the ease at which its parts can be recognised and be organised into a coherent pattern, i.e. the quality that makes a place graspable[21]. To establish directions to strengthen Hong Kong as a unique place will help ensure that we maintain our identity and attractiveness to the world[xx], while at the same time, heighten the sense of belonging of the community.

[xx] Tourism, including the meetings, incentive travels, conventions and exhibitions industry, is an important economic pillar for Hong Kong. In 2014, the tourism industry contributed to 5.1% of Hong Kong's gross domestic product and accounted for 7.2% of the total employment of Hong Kong – Census and Statistics Department (2016) *The Four Key Industries and Other Selected Industries in the Hong Kong Economy.* Hong Kong: HKSAR Government.

Urban Characters - Character Districts and Streets

4.4 Hong Kong's "urban" character is by far the most intriguing component to our imageability for our urban dwellers and visitors. Our image of the city is largely formed by our cognition and experience of the memorable paths, edges, nodes, districts and landmarks of the urban fabric, which make up the urban character of a place[20]. As a strategic direction, we should, on one hand, strive to create localities that are distinctive, enjoyable and which can become unique places in their own right; while on the other hand, safeguard and strengthen existing places that are meaningful to local communities and distinctive to the world.

4.5 If we cast our eyes abroad, from the electronics hub of Akihabara in Tokyo to high-street shopping on Oxford Street, London, character districts and streets are omnipresent in all world cities. These distinctive localities can foster synergies, facilitate trading, and where appropriately managed and promoted, yield additional economic benefits as an attraction for tourists seeking for an authentic local experience.

4.6 Hong Kong is gifted to have many organically grown character districts and streets within the urban areas that specialises in different trades, appealing to locals and tourists alike[xxi], including but not limited to:

- Upper Lascar Row/ Hollywood Road Area (specialises and famous for Antiques), Sheung Wan;
- Des Voeux Road West Area (Dried Seafood and Tonic Food), Sheung Wan;
- SOHO/ Lan Kwai Fong (Bars and Gourmet Dining), Central;
- "Sham Shui Po Fabric Street Market"[xxii], Sham Shui Po;
- Fuk Wa Street Area (Computers), Sham Shui Po;
- Apliu Street Area (Electronics), Sham Shui Po;
- Flower Market Road Area (Flowers/ Birds), Prince Edward [**Figure 24**];
- Bute Street/ Portland Street Area (House Renovation), Mong Kok;
- Nelson Street/ Fa Yuen Street Area (Sportswear), Mong

[xxi] Also see the list in Hong Kong Tourism Board (2016) *Street Markets and Shopping Streets.* http://www.discoverhongkong.com/us/shop/where-to-shop/street-markets-and-shopping-streets/index.jsp

[xxii] A community initiative by some members of the Sham Shui Po District Council to appeal for the designation of the areas bounded by Nam Cheong Street, Fuk Wah Street, Boundary Street and Lai Chi Kok Road as "*Sham Shui Po Fabric Street Market*" - Sham Shui Po District Council (2015) 動議：支持促進《深水埗布料街市場》發展，推動本土經濟發展以改善民生 (Ref. 156/15) http://www.districtcouncils.gov.hk/ssp/doc/2012_2015/en/dc_meetings_doc/333/156_15.pdf

Kok [**Figure 25**];

- Tung Choi Street (Ladies Market), Yau Ma Tei;
- Shanghai Street Area (Kitchenware), Mong Kok;
- Jade Market/ Canton Road Area (Jade), Yau Ma Tei;
- Temple Street Area (Fortune Telling and Night Market), Yau Mei Tei; and
- Shek Lung Street (Wholesale Fruit Market), Yau Mei Tei.

Figure 24 Flower Market Road, Prince Edward

Figure 25 Fa Yuen Street, Mong Kok

4.7 Some districts and streets also possess particular townscape qualities that make them unique. This may include the dominance and close juxtaposition of small shop frontages, the aura of a tree-lined street, the widespread application of a unique building material, construction method, colour palette or urban typology, or even a less tangible spirit of place, etc, which collectively create a unique place image where the whole is greater than the sum of its parts. Notable examples include Tai O on Lantau Island, Kowloon Tong, Kowloon City, Kadoorie Hill and the tree-lined boulevards in Tsim Sha

Tsui (Nathan Road, Haiphong Road and Chatham Road South), the older parts of Central (the site of the original Victoria City), Tai Hang, The Peak area, Stanley, Aberdeen and the Jardine's Lookout/Blue Pool Road area, amongst others [**Figure 26**].

4.8 In recognition of the socio-economic values of character districts and streets, world cities are dedicated to promote particular land use(s), function(s) or townscape attribute(s) of local interest through planning and other policy measures/ incentives. To further the uniqueness of Hong Kong's urban identity, character studies could be undertaken to comprehensively stock take and review the character districts and streets in Hong Kong. Where appropriate, district-wide or area-based urban design plans (including a coherent townscape improvement strategy and other supplementary guidance, etc) could be formulated and piloted for particular localities to guide responsive (re)developments within these unique areas. The emphasis should be for future developments/ redevelopments/ revitalisation to respect and respond to the significant local character(s) and townscape quality(s) as far as possible, whilst retaining their own individual identity. Other possible follow-up outcomes include publicity/ branding or advocacy statements, and other planning and design measures, etc.

Special Zoning Districts, New York City

Special Zoning Districts have been established in New York City since 1969 where specific planning and design regulations and/or incentives have been formulated to safeguard and promote unique urban characters. Such measures include restrictions on premises used for particular land uses (e.g. the Special Garment Center District); requirements on the inclusion of particular land uses (e.g. the Special Harlem River Waterfront District); requirements on particular façade installations (such as neon lighting)/ special permits for certain demolition works/ floor area bonus for the rehabilitation of certain uses (e.g. the Theatre Subdistrict of the Special Midtown District); and incentives for the provision of designated public spaces (e.g. the Special 125th Street District).

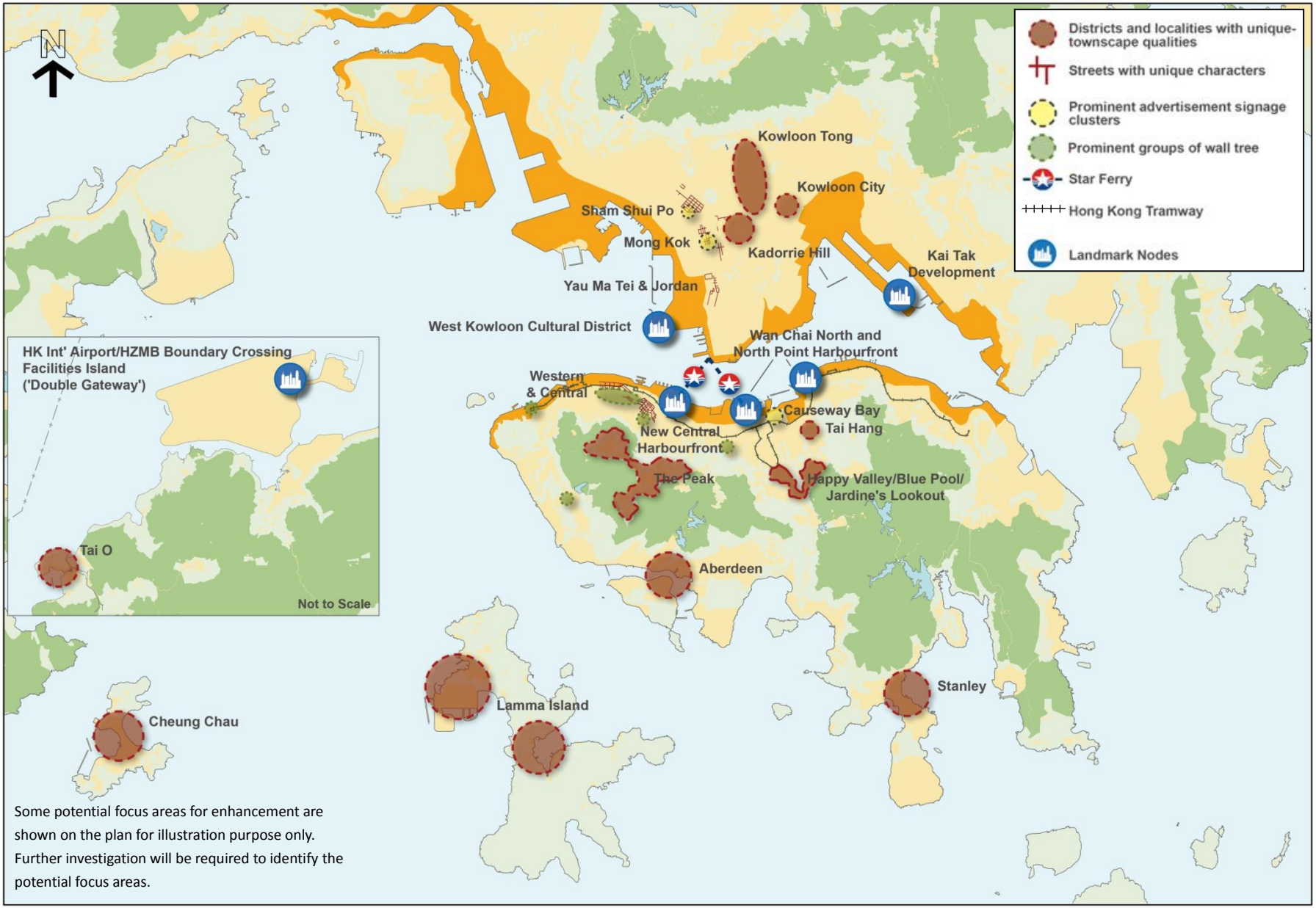


Figure 26 Urban Characters of Hong Kong

Publicity/Branding and Advocacy Statements in East Kowloon

In terms of publicity/branding, the "Study on Industrial Heritage of Kowloon East and its Potential for Public Art and Urban Design" (the Study) has created a discovery map and a walking trail highlighting the industrial and creative culture of Kowloon East [**Figure 27**].

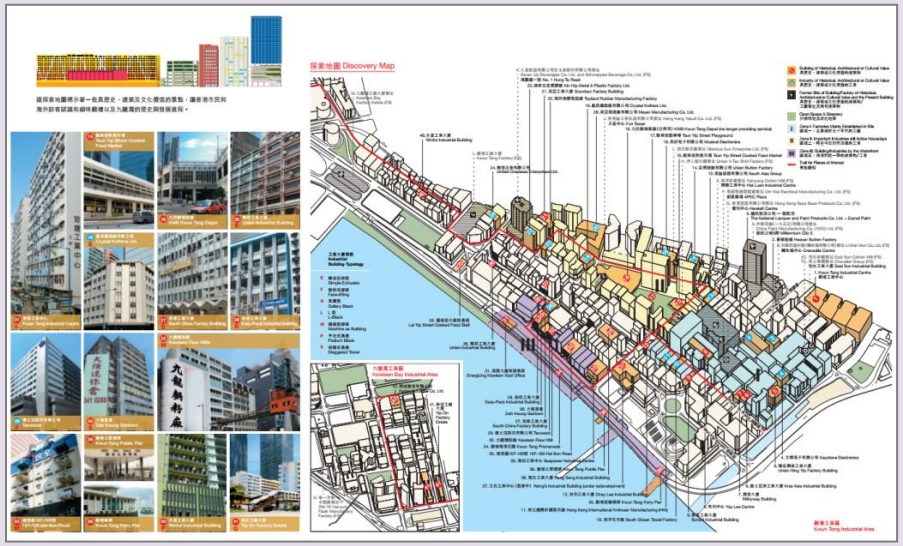


Figure 27 Extract of 'The Spirit of Creation' Discovery Map

'The Spirit of Creation: The Past and Future of Industries in Kowloon East' is an advocacy statement borne out of the Study and promulgated by the Energizing Kowloon East Office to encourage private owners and developers to incorporate industrial culture elements into their (re)development or conversion projects by showcasing the history of their buildings and sites, as well as the spirit of the area.

Urban Characters – Landmarks

4.9 In an increasingly homogenous world and accelerating globalisation, the promotion of high-quality landmark architecture has become a hotly-contested arena for city marketing amongst world cities. In the Asian context, the Dongdaemun Design Plaza completed in 2014 has become the latest trendy design, fashion and tourist hub of Seoul, upgrading the old image of the fashion and fabric wholesale outlets in the eastern part of the city [**Figure 28**]. The ongoing transformation of Marina Bay through a concoction of urban parks, modern architecture and heritage conservation efforts has also had a profound contribution in uplifting the traditional heart of Singapore [**Figure 29**]. The same urban trend is being practiced in other world and regional cities across the globe.

Figure 28 Dongdaemun Design Plaza, Seoul

Figure 29 Marina Bay, Singapore

4.10 Being the unequivocal high-rise capital of the world[xxiii], Hong Kong is not short of tall buildings. But what Hong Kong can benefit more from are buildings of exceptional design qualities – edifices that could become landmarks in their own right. Promoting high-quality architectural design in prominent areas, such as the Airport Island/ HZMB Hong Kong Boundary Crossing Facilities Island, the West Kowloon Cultural District/ Guangzhou-Shenzhen-Hong Kong Express Rail Link Terminus, Kai Tak area, and the New Central Harbourfront, Wanchai North and North Point Harbourfront, will accentuate such locations as landmark nodes [**Figures 26 and 30**]. Design briefs and the setting up of design panel(s) consisting of internationally renowned local and foreign professional experts could also be encouraged to provide guidance and consultation for proposals at these potential landmark nodes. Overall, we should acknowledge that quality is not entirely subjective, and could be grounded in objective criteria (such as order/clarity of spatial organisation, compatibility/degree of contrast to its context, detailing, and environmental/ sustainability credentials, etc.) – the key is to strike the appropriate balance between control and flexibility.

[xxiii] Hong Kong was ranked first in the world according to the number of completed skyscrapers by The Council on Tall Buildings and Urban Habitat (as of October 2016).

Figure 30 New Central Harbourfront

Urban Characters – City Icons

4.11 Districts, paths and landmarks aside, the imageability of place can also derive from the various elements of the cityscape. The double-decker cross-harbour ferries at Victoria Harbour[xxiv], the narrow double-decker trams on Hong Kong Island[xxv], the fascinating juxtaposition of advertisement signage on certain streets of Kowloon [**Figure 31**], a canvas of wall trees [**Figure 32**], and the vibrant street markets and hawker stalls, etc, are all vivid components of Hong Kong's imageability across the world.

Figure 31 Tai Nam Street, Sham Shui Po

[xxiv] The Star Ferry ride was ranked second in the list of "*top things to do in Hong Kong*" on Tripadvisor.com (as of October 2016).

[xxv] The Hong Kong Tramway ride was ranked sixth in the list of "top things to do in Hong Kong" on Tripadvisor.com (as of October 2016).

Figure 32 Pok Fu Lam Reservoir Road, The Peak

4.12 We shall endeavour to safeguard in-situ and, where appropriate, promote the long-term future of Hong Kong's city icons. Character studies with stakeholder input could be carried out to identify the city icons of Hong Kong, which could then be translated into district-wide or area-based urban design plans and/or other forward planning documents to help sustain their long-term futures.

Countryside and Nature Characters

4.13 As the frontier between built-up areas and nature, the values of our remote countryside are being increasingly recognised in Hong Kong. As a recreational, leisure and educational outlet from the bustling urban areas and towns, the countryside plays a key role in offering a place of respite for city dwellers [**Figure 33**].

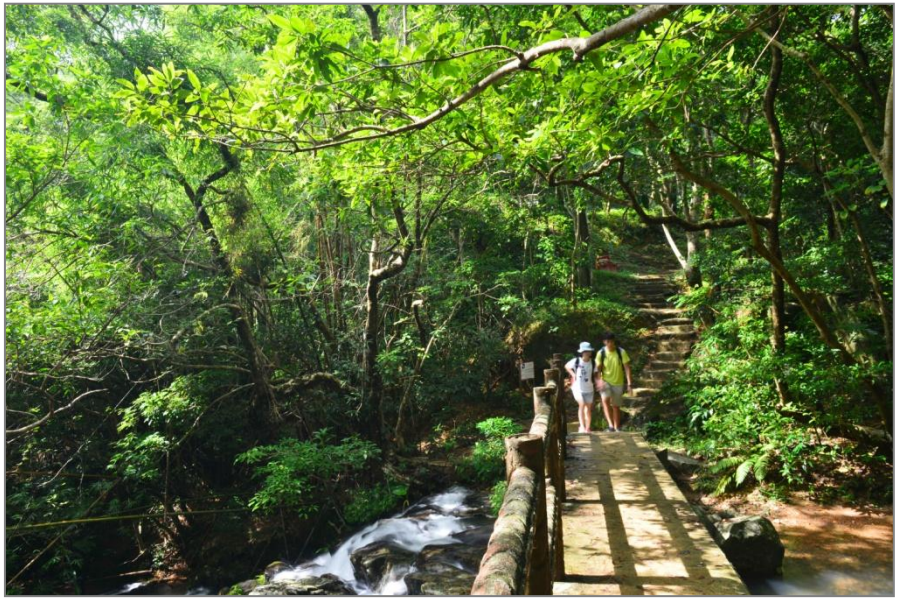


Figure 33 Country Parks as Recreational Outlets for Urban Dwellers

4.14 A number of community initiatives have emerged in recent years to revitalise abandoned villages and cultural landscapes with the objective to rekindle our connections with the countryside under the concepts of sustainability, organic growth, low-carbon, eco-friendliness and biodiversity. To optimise the countryside for the

enjoyment of urban dwellers, responsive countryside revitalisation initiatives that complement with sustainability principles should be encouraged and promoted wherever appropriate.

4.15 Our hilly terrain has created many viewsheds, which provide a natural backdrop for our urban areas [**Figure 35**]. Developments should not bring unacceptable adverse impacts on significant viewsheds. Along the ridges of our viewsheds will we often find unique topographies of high landscape values. From the split peaks of Lantau Peak (Fung Wong Shan) that gave Lantau Island its name, the saddle-shaped peak of Ma On Shan, to the famous "eight immortals" of Pat Sing Leng, references to Hong Kong's unique topographies are firmly embedded in our perception of place, and forms a key component in our ties with nature. The most famous unique topography of Hong Kong being the Lion Rock, with its close resemblance of a crouching lion overlooking Kowloon Peninsula, and more recently, Lion Rock symbolising the Spirit of Hong Kong people [**Figure 34**].

Figure 34 The Unique Topography of Lion Rock

4.16 As a continued design direction, major visual corridors towards our unique topographies should be designated and be extended into the built-up areas wherever possible[xxvi]. In this way, the distant nature would remain untouched but its visual connection would be enhanced and better enjoyed in the urban area by the wider public. To ensure that the design of the townscape would holistically incorporate the surrounding natural assets, district-based urban design plans, taking due account of individual design context, should be prepared to provide guidance.

[xxvi] For instance, in the masterplanning of the Kai Tak area, a major visual corridor has been designated between the Harbourfront Area and the valued natural landscape of Lion Rock.

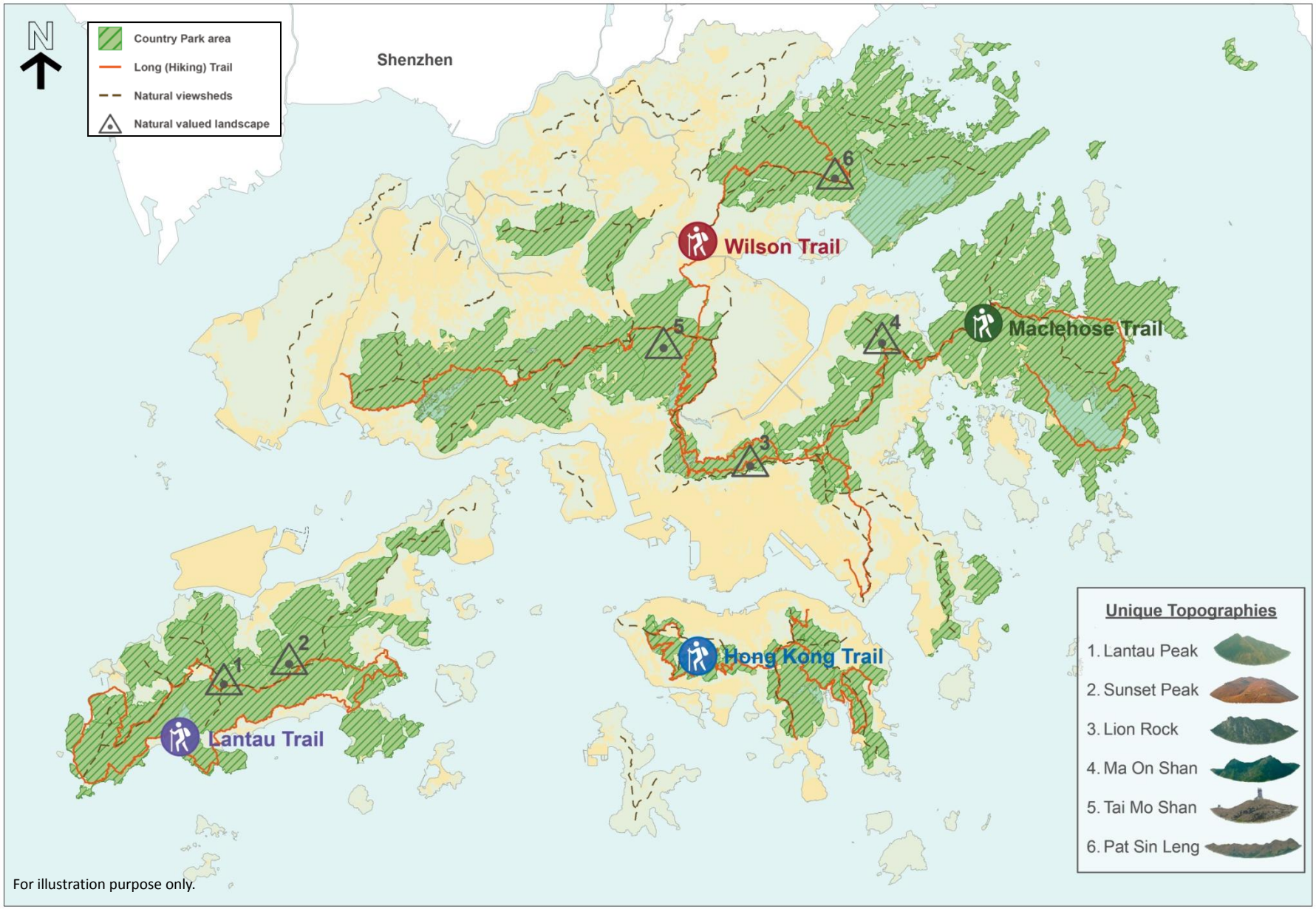


Figure 35 Viewsheds and Unique Topographies of Hong Kong

Rural Character

4.17 Following four decades of New Town development, we have developed nine New Towns accommodating over 3.4 million people. In the process of developing New Towns, we have strived to incorporate rural characteristics into the overall design. For instance, the original river valley settings had been respected in the overall layout of new towns such as Sha Tin New Town and Tai Po New Town [**Figure 36**]. Where there were strong traditions of trading at market towns, the planning and design of old town centres had been responsively set amongst a compatible, relatively low-rise and walkable environment, such as Tai Wai in Sha Tin New Town, Yuen Long Kau Hui in Yuen Long New Town, and Tai Po Hui in Tai Po New Town.

4.18 We should continue to pay due respect to the prevailing rural characters of the traditional communities in the planning and design of compact NDAs. View corridors of cultural significance should also be respected and duly incorporated in the master planning process[xxvii]. A variety of building heights, densities, massing and built forms should also be employed in commensuration with the context, so as to create a more harmonious transition and a sense of place for individual new towns.

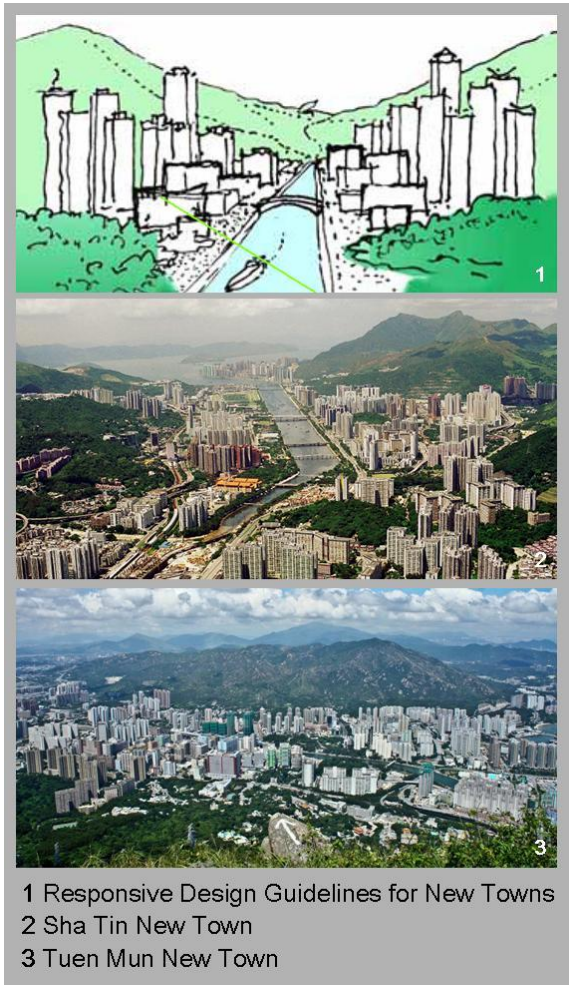


Figure 36 Respect for Rural Characteristics in New Towns

[xxvii] For instance, two *fung shui* lanes aligning with the Ping Shan heritage precinct and Ha Tsuen have been proposed under the 'HSK NDA Planning and Engineering Study' to protect the existing culturally significant views from the built heritages therein.

Urban-Rural-Countryside-Nature Continuum

4.19 Our compact high-density city in close juxtaposition with our rural, countryside and natural surroundings underlines the uniqueness of Hong Kong. Our "urban" consists of the rich diversity and vibrancy within our colourful built-up areas. Our "rural" encompasses much of our New Territories, from established market towns to village clusters and some populated outlying islands. Our "countryside" includes remote tranquil villages set amongst rich cultural landscapes and often within *fung shui* woodlands where high scenic values are common. Lastly, our "nature" mostly embodies protected Country Parks and special areas where ecological and landscape values are often high.

4.20 From a global perspective, it is rare for a world city to possess such a rich and diverse continuum of urban-rural-countryside-nature in close proximity to one another. This special harmonious relationship shall continue to be a fundamental component to Hong Kong's imageability [**Figure 37**].

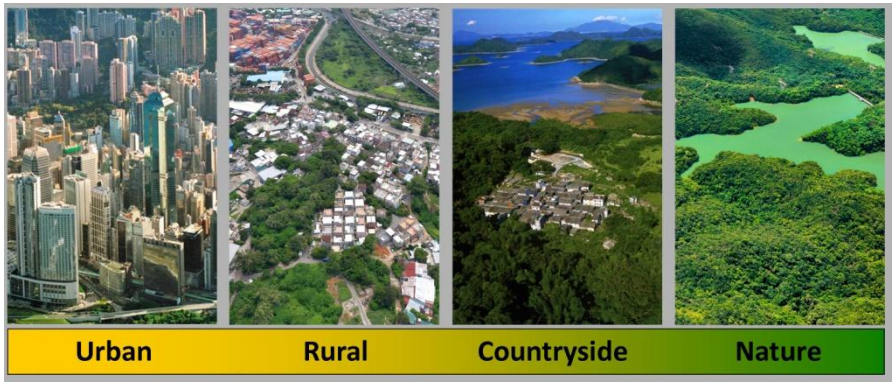


Figure 37 Hong Kong's Urban-Rural-Countryside-Nature Continuum

4.21 We shall foster a more coherent continuum of the four components by further promoting and optimising development in the "urban" area; facilitating more appropriate uses, more integration and better transition alongside responsive buffer areas with the "rural"; maximising physical access and public enjoyment of our "countryside"; and preserving the "nature". We should continue to respect and maintain the uniqueness of each of these four components to Hong Kong's image, while facilitating ways to make them interface better for one another in a harmonious manner.

4.22 For instance, rural identities, countryside qualities and natural elements could be assimilated in the design of our future urban extensions, NDAs and suburban nodes; while various forms of nature and countryside could be

retrofitted in the urban areas through better connectivity to the natural environment, enhancement of green and blue assets, and creation of urban ecology, such as adoption of urban forestry strategy and revitalisation of manmade channels. However, we should also acknowledge that central and easily accessible locations tend to assume nodal importance, which ought to be optimised for sustainable urban development. In the process, this may inevitably lead to the displacement of existing rural uses, though elements of which could still be retained or reinterpreted in the urban fabric. Overall, the key is to ensure that our design process remains multifaceted by intertwining the various components of this "urban-rural- countryside-nature continuum" in our planning and design, as opposed to treating each component in isolation.

The Victoria Harbour and its Setting

4.23 The Victoria Harbour and its setting are Hong Kong's definitive icon as "Asia's World City" [**Figure 38**]. Once the busiest freight harbour in the world, the worldwide importance of the Victoria Harbour now rests more on its iconic scenic value as the foreground of the fascinating juxtaposition of blue sky, green mountains and spontaneous urbanity that combine to form the well-recognised image and identity of Hong Kong[xxviii], and the foremost venue to showcase our city to the world[xxix].

Figure 38 The Definitive Icon of Hong Kong

4.24 In recognition of its special iconic values, the protection of ridgeline views and their "20% Building Free Zones" as viewed from Strategic Viewing Points (SVP) on either side of Victoria Harbour was first proposed in the Metroplan in 1991, and has since been translated into the Urban Design Guidelines (UDG) of the HKPSG, the relevant Outline Zoning Plans (OZP) and other planning guidance [**Figure 39**]. Our ridgeline protection strategy has also been acclaimed as a notable and visionary

[xxviii] The Hong Kong Skyline was ranked first in the list of "*top things to do in Hong Kong*" on Tripadvisor.com (as of October 2016).

[xxix] The Victoria Harbour setting plays host to a number of major events throughout the year, from firework displays, Christmas and Chinese New Year lighting decorations, to the world's largest permanent light and sound show – "*A Symphony of Lights*".

planning legacy in the field of urban design[xxx]. The enactment of the Protection of Harbour Ordinance in 1997 established a presumption against reclamation in the harbour so as to ensure that Victoria Harbour will be protected and preserved as a special public asset and natural heritage of Hong Kong.

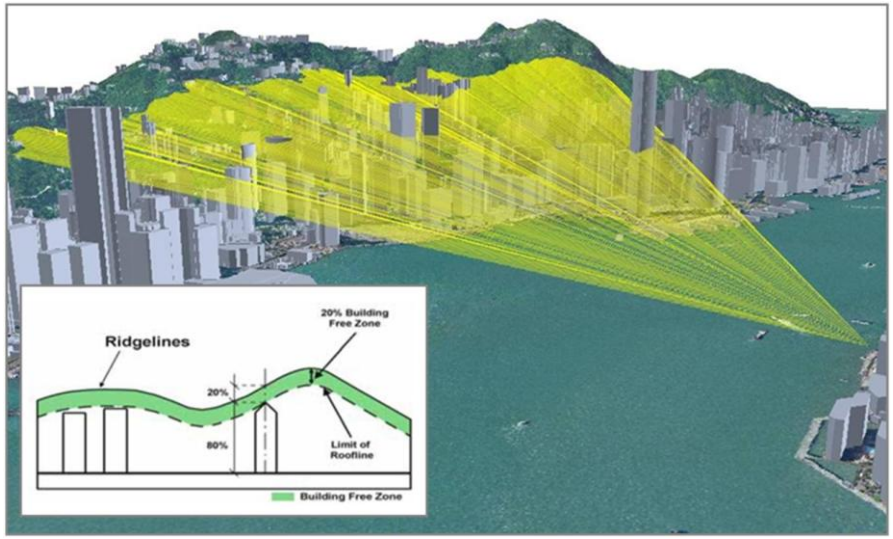


Figure 39 Viewfan Analysis from a Strategic Viewing Point

4.25 As a strategic direction, the visual amenity and intervisibility of Hong Kong's foremost natural assets of Victoria Harbour and its surrounding hill ridges and mountain backdrop should continue to be protected. Developments/ redevelopments that would encroach into the "20% Building Free Zone" of the protected strategic views would only be considered under exceptional circumstances.

4.26 Besides, every effort should be made to preserve, enhance and/or create views towards the Victoria Harbour from public spaces where appropriate. In particular, there shall continue to be strong protection of views of Victoria Harbour from the SVP at The Peak[xxxi].

4.27 The ridgeline protection strategy was first formulated over two decades ago, and it may be opportune to review this. For instance, besides The Peak, the intervisibility between Victoria Harbour and other important elevated viewpoints (VP) may warrant further protection; the locations of some SVP and/or the respective protected viewfans and "20% Building Free Zones" may also warrant fine-tuning to reflect changes in planning circumstances during the interim; some existing VP(s), such as elevated VP(s) at Kowloon, may also warrant a heightened status as SVP(s), etc [**Figure 40**].

[xxx] Alex Lehnerer proclaimed that Hong Kong's recognition of its own topographic specialty in strategic view protection as "*Here is a city fully aware of its own magnificence!*" – Lehnerer, Alex (2009) *Grand Urban Rules*. Rotterdam: O1O Publisher. p.135.

[xxxi] "Visiting The Peak" was ranked third in the list of "*top things to do in Hong Kong*" on Tripadvisor.com (as of October 2016).

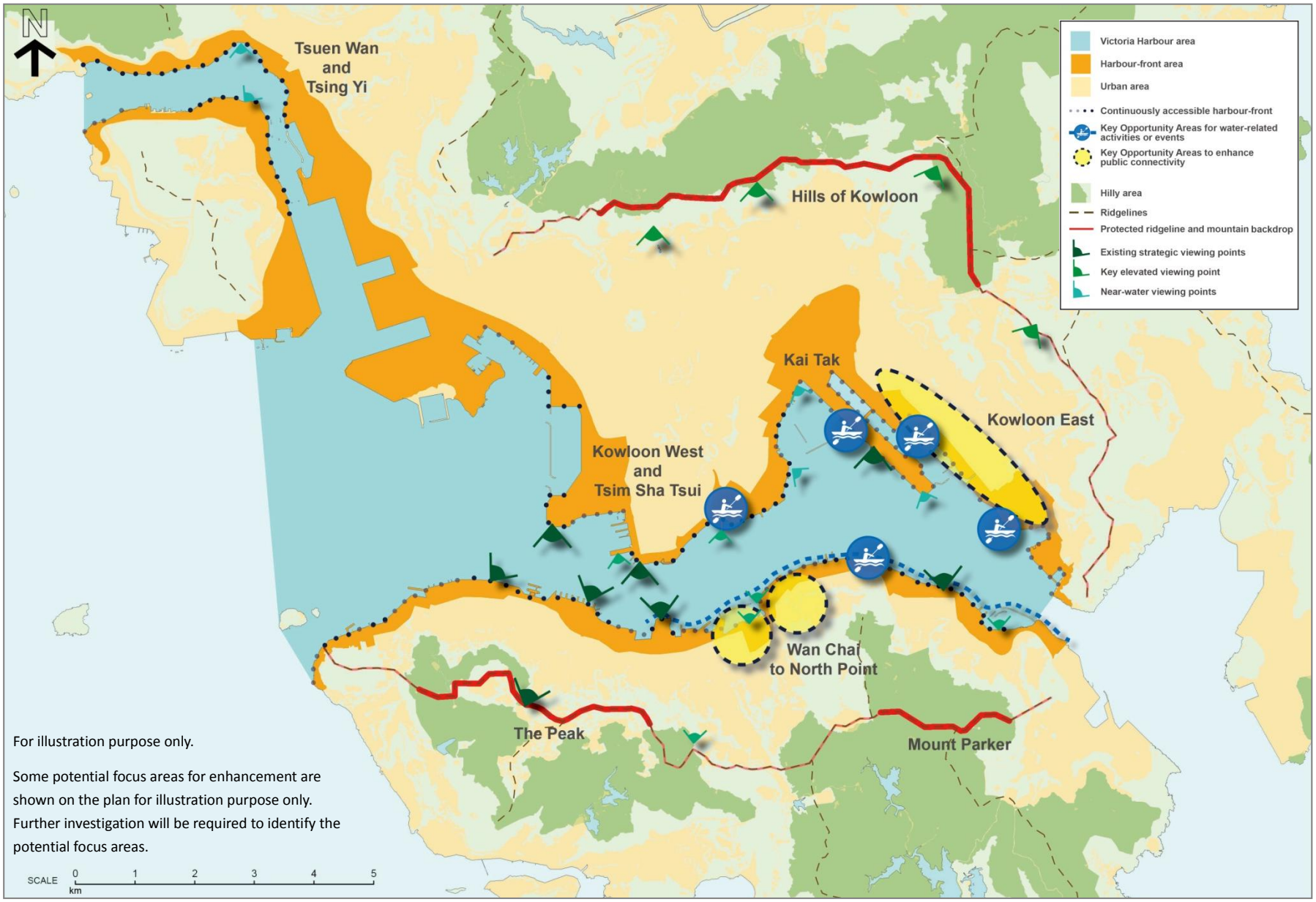


Figure 40 Victoria Harbour and its Setting

Harbourfront

4.28 The ongoing transformation of Victoria Harbour calls for a rethink of the functions of one of the world's greatest city *edges*[xxxii] – our 73km-long Harbourfront [**Figure 40**]. The Government will continue its commitment in developing the Harbourfront as a sustainable, accessible, vibrant, attractive and enjoyable place for the people – a commitment that is reflected in the TPB's Vision Statement for the Victoria Harbour (Vision Statement) formulated in the early 2000s. The then-Harbourfront Enhancement Committee (subsequently replaced by the Harbourfront Commission) has also promulgated the Harbour Planning Principles and Harbour Planning Guidelines for Victoria Harbour and its Harbour-front Areas (Harbour Planning Principles and Guidelines) in 2006 and 2007 respectively, which reinforces the same vision in creating a world class Harbourfront. The UDG of the HKPSG also provides urban design considerations and guidance for the Harbourfront Area.

4.29 We have revisited the land use and examine the scope for harbourfront enhancement by progressive undertaking of urban design studies for different harbourfront areas. Between 2003 and 2015, the waterfront promenade extended by 7km [**Figure 41**]. New reclamation has also provided opportunities for comprehensive waterfront developments, for example, the New Central Harbourfront, the Wan Chai North and North Point Harbourfront, the Kai Tak Development and the arts, cultural and entertainment hub in the making at the West Kowloon Cultural District – as part of the on-going emergence of a cultural cluster around the Victoria Harbour. Opportunities also exist for incremental improvements to existing harbourfront areas to enable public enjoyment and enhance vibrancy.

Figure 41 Kwun Tong Waterfront Promenade

[xxxii] "*Edges* are the linear elements not considered as paths: they are usually, but not quite always, the boundaries between two kinds of areas" - Lynch, Kevin (1960) *The Image of the City*. Cambridge, MA: MIT Press. p.62.

4.30 Recreational, tourism, water leisure and other uses in line with the Vision Statement and the Harbour Planning Principles and Guidelines at the Harbourfront Area should continue to be promoted. The Harbourfront Area and the Harbour itself would be further enhanced to become an attractive, vibrant, accessible and sustainable world-class asset.

4.31 Given the gradual improvement in water quality, we should seek to optimise the waterbody by promoting high-quality and innovative design for the land-water interface of the Harbourfront. The aim is to promote a "water-friendly" culture in Hong Kong with water dependent and waterfront-related uses along the harbourfront where appropriate.

VIBRANCY

Compatible Mix and Variety

4.32 As mentioned in section 2, compact city promotes vibrancy through compatible mixed uses. We also need to optimise, reinvent and re-energise urban spaces both horizontally and vertically in the prudent planning and design of NDAs and the retrofitting of the densely developed urban areas. We should endeavour to unlock latent/ sterilised development potentials and promote adaptive use of vacant land, optimise spaces under flyovers for compatible uses, further explore and optimise the use of underground spaces and caverns [**Figure 42**], and regenerate obsolete industrial sites/ brownfield land/ former landfills / former quarries, etc.

Figure 42 Tai Hang Tung Underground Stormwater Storage Scheme

4.33 The same attention should also be given to micro-level design. The experience zone or edge zone, i.e. the place where the city meets the buildings, is perhaps the most vital ingredient to street vitality. Active ground floor

frontages[xxxiii], especially the close juxtaposition of varied shop fronts in quick successions, have been a hallmark of Hong Kong's vibrant streetscape for the past century. However, there has been a departing trend in recent years where inactive, secluded and/or blank street frontages were developed. Where the local context warrants the safeguarding and/or promotion of vibrant street environments, responsive planning and design measures should be implemented to promote active street frontages, including those in new town extensions and NDAs.

4.34 If we trace back the urban evolution of Hong Kong, we often find wet markets as the focal point of diversity and vitality. Wet markets and cooked food centres/ bazaars are indeed very often a major city attraction as a kaleidoscope of the local culture and a key component of cultural tourism worldwide [**Figure 44**]. It is therefore worth exploring the use of responsive planning and design measures to promote street level vibrancy and vitality within the proximity of markets and other user generating urban nodes.

Rekindling Active Street Frontages

To promote neighbourhood convenience, street vibrancy and enhance visual amenity, pedestrian/shopping streets and terraced podium design requiring setback of the first floor of building podia have been proposed along the shopping streets in NDAs, such as Kwu Tung North NDA and HSK NDA [**Figure 43**].

Figure 43 Proposed Terraced Podium with Retail Frontage in HSK NDA

Figure 44 La Boqueria Market: A Major Cultural Attraction of Barcelona

[xxxiii] "*Any indoor area which can contribute to outdoor activity in either of these ways* [when the indoor activity extend outwards into the adjacent public outdoor space; or when the indoor activity offer visual contact to public passersby] *is called an* active *area*" – Bentley, Ian et al (1985) *Responsive Environments: A Manual for Designers.* London: Architectural Press. p.58.

Urban Robustness

4.35 Urban robustness[xxxiv] is a key attribute for vibrant places. Places that offer round-the-clock activities for people, as well as spaces that can accommodate different functions are efficient and vibrant. The innovative and flexible use of public spaces for active uses for public enjoyment should be encouraged as far as possible, such as for temporary functions and pop-up events, e.g. district and city events, weekend fairs, farmer markets, cultural events, festive celebrations, flea markets and night markets, etc.

4.36 Impermanence is another key attribute of our urban landscape[22]. The rate at which premises are transformed is often very fast. However, more and more premises are responding to this urban dynamic by introducing new uses (such as hydroponics), accommodating a multitude of different uses within the same premises (such as experience cum retail shops), as well as having different uses at different times of the day (such as daytime cafes transforming into mini cinemas for evening film screenings). Consideration could be given to investigating ways to promote and encourage adaptive premises and spaces suitable for flexible uses/ functions in commensurate with licensing and other relevant regime(s). In gist, we should promote both use mix and time mix within our compact high-density city.

Art in Public Spaces

Figure 45 Art in Public Spaces

4.37 The percolation of art in public spaces can promote the attractiveness of the urban environment, evoke the imageability of place and could become attractions in their own right [**Figure 45**]. The experience of world

[xxxiv] "*Robustness concerns the ability of the building as a whole, or large parts of it, to be changed in use*" – Bentley, Ian et al (1985) *Responsive Environments: A Manual for Designers.* London: Architectural Press, *p*.57.

cities has shown that the integration of art in public spaces can be a key component in city branding and marketing, and is vital to showcasing their "soft powers" to the world. As such, the embracement of art in all aspects of the built environment should be encouraged and promoted in a systematic manner. This could add value and credentials to our image as an inviting world city that welcomes new and innovative ideas.

4.38 Public art initiatives in public sector projects have seen a steady increase since the promulgation of the Public Art Scheme and the establishment of the Art Promotion Office in the late 1990s. District-based initiatives have also been championed on a pilot basis, such as the "Public Creatives" initiative[xxxv] in Kai Tak to promote its identity. While the number of public art initiatives in private sector developments has also grown in recent years, the trend has yet to become prevalent. We should endeavour to promote and champion public art in both public and private sector projects as far as possible, which may include advance planning for competition in NDAs and award/ recognition systems for high achievers.

[xxxv] "Public Creatives" in Kai Tak is an innovative place branding initiative with the aim to foster a visually cohesive and distinctive identity that reflects the core values and personalities of the area, which also attracts talents locally and internationally. By integrating place branding into all aspects of the streetscape, such as street furniture, street naming, art and activities, the initiative aims to communicate the place brand and signature of Kai Tak to a wider audience.

DIVERSITY

4.39 The quest for diversity has been one of the key objectives of modern day urban design since the 1960s[8]. As a cosmopolitan city, Hong Kong embraces diversity and exhibits fascinating contrasts. It is an international and regional gateway with a fusion of East and West, in terms of architecture, lifestyles and cultures. It showcases a harmonious co-existence of traditions and modernity, where gleaming skyscrapers adorn rustic street markets. It also encompasses vibrancy and tranquillity, where one can enjoy both cosmopolitan living and nature within a short commuting distance of one another.

Diversity (Culture)

4.40 As a place where the East meets West, where the new emerges from the old, and where the coming and going of people and goods are commonplace, Hong Kong has long been a hotbed for cultural diversity. Throughout the decades, our music has reflected the transformation of the city, from early hardships and struggles to periods of prosperity. Our film industry has long embraced the hustle and bustle and compact setting of our high-density city to create some of the best action thrillers and fostered world-renowned superstars. Our music and films, as

well as performing arts, exert enormous influence not only within our city, but also in every Chinese community of the world. The diverse culture has also inspired creative industries and embodies our "collective memory". Looking ahead, we should endeavour to embrace our rich cultural history and enable its sustainable development well into the future.

Diversity (Choices)

4.41 Diversity can inhabit the city in many interesting ways, from diversity in the style of living, our leisure lifestyles and pursuits, through to diversity in cultures and social backgrounds. The embracement of diversity should percolate to every aspect of planning and design with an aim to offer genuine choices for the people.

4.42 The range of diversity and choice consideration is vast: from the planning of different housing types and housing mix for different users (in terms of housing densities, accommodation types, setting and the locality, etc.), and working styles (in terms of operational characteristics and locality, etc. for modern industries and creative industries etc.), through to the design of different recreation and leisure pursuits (in terms of active and passive pursuits, and water and land-based pursuits, etc).

Diversity (Heritage Conservation)

4.43 Heritage provides important and distinctive temporal references within the urban fabric, ensures a sense of continuity within our personal perception of time-places[23], contributes to the imageability of place and city cultures, and often embodies our collective identity within the built environment, which cannot be replaced or recreated once lost[24]. Heritage conservation and the adaptive reuse of heritage assets is also a prudent form of development within an environmentally conscious society. Some historic buildings have become incubators for new industries and the creative sector[8] [**Figure 46**].

Figure 46 PMQ - Creative Industries in Historic Building

4.44 As a successful world city, Hong Kong should regulate the pace of change in certain sensitive areas of cultural significance, while promoting change in less sensitive areas or in areas in need of transformation. Every effort should be made to conserve the cultural significance, heritage values, authenticity, integrity and setting(s) of Hong Kong's tangible and intangible heritage, and revitalise those built heritages in need [**Figure 47**]. We should also promote the conservation of sites of archaeological interests, details of which can be found in the "*Environmental Protection and Nature Conservation for Sustainable Growth*" topical paper.

Figure 47 Revitalisation of the Former Chai Wan Factory Estate

Built Heritage and its Ambience

4.45 The protection of areas surrounding historic sites is one of the core pillars of heritage conservation[25]. The 'Conserving Central' initiative of the 2009-10 Policy Address has established the groundwork and secured the long term futures of a number of historically and culturally significant sites in Central, spanning from the formative years of the colonial period (Central Police Station Compound) through to post-war modernist architecture (Murray Building), as well as forthcoming contemporary landmark architecture at Sites 1 and 2 of the New Central Harbourfront. Coupled with the range of built heritage assets and heritage trails in the vicinity, as well as our natural heritage of the Victoria Harbour at its doorstep, we essentially have all the components to tell '*The Story of Hong Kong'* at the heart of the CBD [**Figure 48**].

4.46 While historic ambience is omnipresent in all heritage assets, so far there are only a few examples that acknowledge and protect the ambience of built heritage in Hong Kong. The significance and extent of the ambience to be conserved should be subject to investigation(s) and can be prescribed in the statutory town plans and/or district-wide urban design plans to guide future (re)development. A review could be

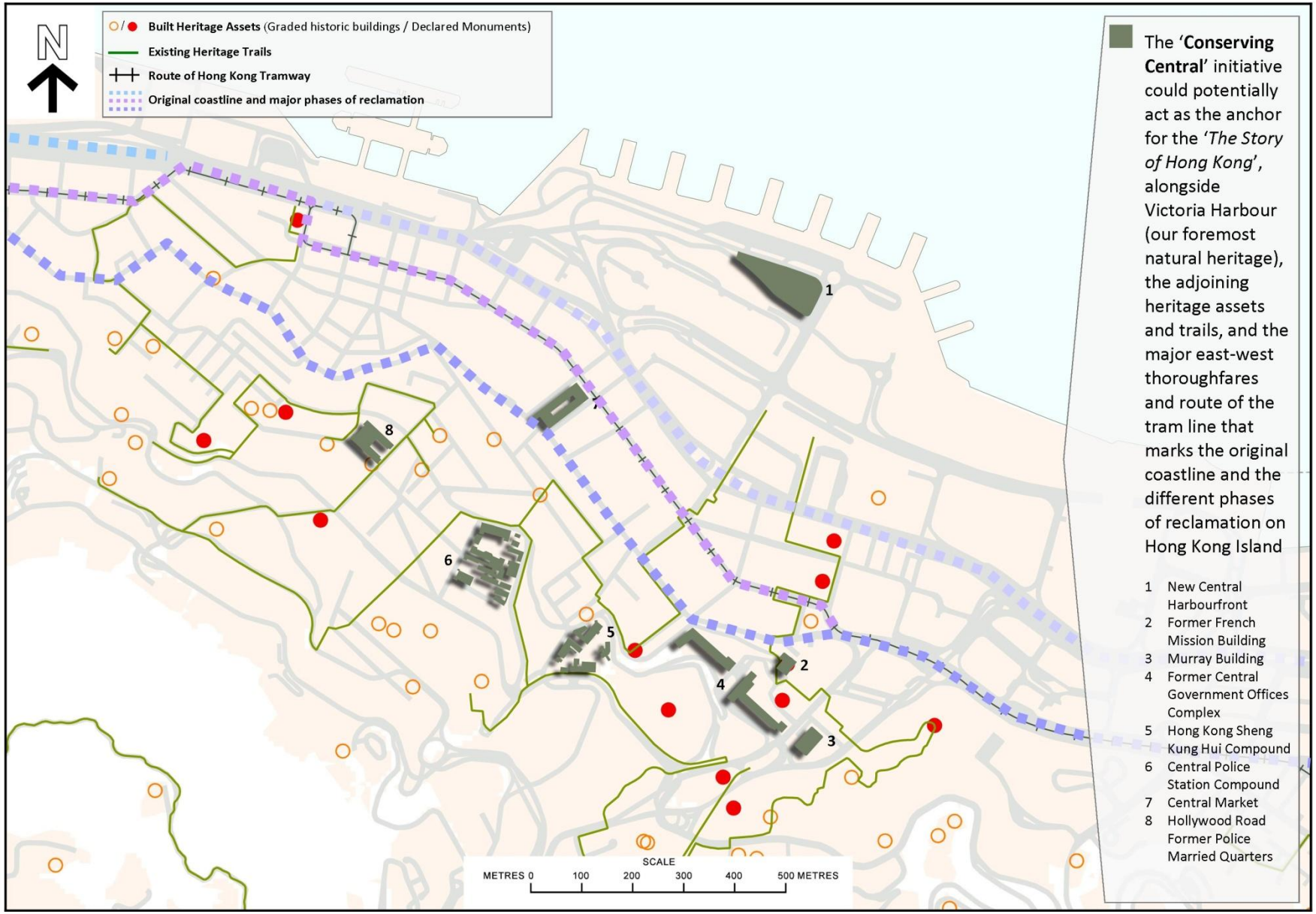


Figure 48 Conserving Central: 'The Story of Hong Kong'

conducted to further understand and identify the ambience for the built heritage assets of Hong Kong, and to recommend measures to safeguard and promote their ambience. For areas with high concentration of built heritage assets, new heritage trails (together with publicity and supporting facilities and services) should be designated for heritage education and tourism.

Setting(s) to Intangible Cultural Heritage

4.47 Intangible cultural heritage (ICH) embodies wisdoms passed on from generation to generation, the protection and promotion of which is an integral part of our cultural continuity. The Government continues to attach great importance to the safeguarding of ICH in Hong Kong and supports the protection, transmission and promotion of ICH to ensure the sustainable development of our local culture and traditions. As seen in The First ICH Inventory of Hong Kong, the territory is rich in ICH of local importance.

4.48 Although intangible in nature, many of the larger-scale ICHs do require a tangible and appropriate setting for it to take place. For instance, dragon dances that could involve hundreds of participants, and open-air Cantonese operas during religious ceremonies. The Cheung Chau Jiao Festival, Tai O Dragon Boat Water Parade, Tai Hang Fire Dragon Dance and Hang Hau Hakka Unicorn Dance are all examples of ICHs of National Importance set within specific spatial settings [**Figure 49**].

4.49 International convention advocates the safeguarding of ICH as an integral part of planning programmes[26]. It is thus prudent to study the significance of the setting(s) to our ICHs, and devise measures to safeguard and promote the setting(s). Moreover, we should take heed of the sustainable future of relevant ICHs in the course of urban renewal or regeneration.

Review of Built Heritage Conservation Guidelines

4.50 The approach and practice of heritage conservation is constantly evolving. Reflecting on our recent experiences in heritage conservation, and having regard to the latest international charters and standards[27], consideration could be given to reviewing the administrative guidelines for enhanced heritage conservation. The scope of this review may include the relevant sections of the HKPSG, the Environmental Impact Assessment Guidelines on Heritage Impact Assessment, etc.

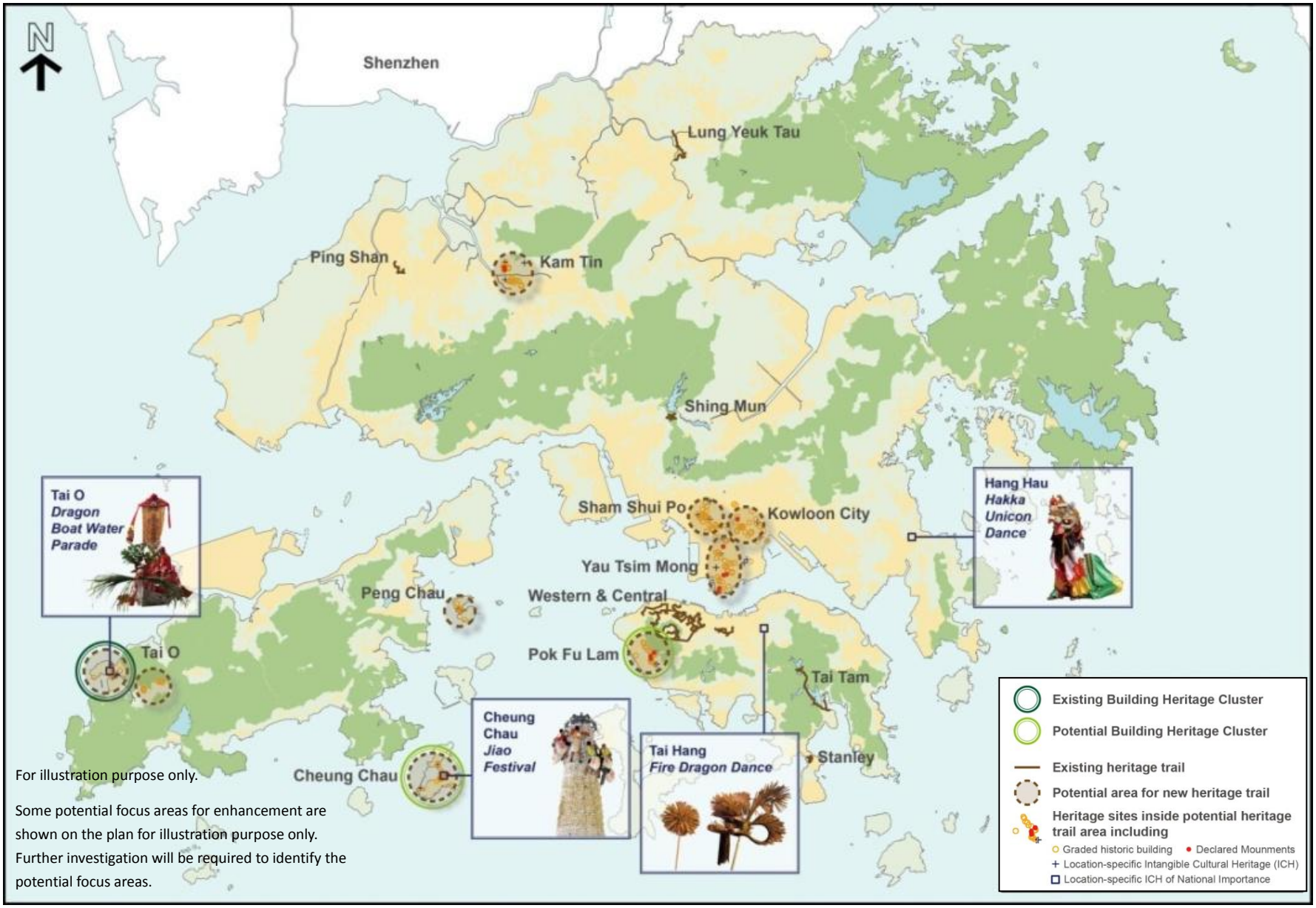


Figure 49 Heritage Assets of Hong Kong

PLANNING FOR A UNIQUE, DIVERSE AND VIBRANT CITY: KEY STRATEGIC DIRECTIONS AND ACTIONS

4.51 The key strategic directions and actions for planning a unique, diverse and vibrant city are highlighted as follows:

Key Strategic Directions	Key Actions
Promoting unique city characters	• to safeguard and promote unique urban characters, including city icons, character streets and districts, as well as the unique urban-rural-countryside-nature continuum through district-wide Urban Design Plans • to create a vibrant world-class harbour and harbourfront for the people under a comprehensive harbourfront plan, promote coherent cultural clusters around the harbour, enhance the land-water interface under a "water-friendly" culture, and protect the visual setting of the harbour with its surrounding mountain backdrops
Creating vibrancy	• to encourage compatible use-mix and time-mix through robust design for better synergy • to promote street vibrancy, inviting streetscapes and good walkability • to promote cultural diversity, city branding, and building up our soft power
Embracing diversity	• to conserve heritage buildings and their historic ambience • to prudently review the existing guidelines on built heritage conservation • to explore innovative building layouts and designs to cater for the changing living, working and leisure space requirements

5 PLANNING FOR A HEALTHY CITY

> "Healthy ***urban planning means planning for people. It promotes the idea that the city is much more than buildings, streets and open spaces, but a living, breathing organism, the health of which is closely linked to that of its citizens.***"
>
> World Health Organisation (2000)
> *Healthy Urban Planning*[28]

5.1 Health-conscious planning and design of cities has a positive contribution to the health of its citizens. The health of the city is increasingly being affected by the urban climate, which is partly linked to the layout and design of the built environment. On the other hand, the health of urban dwellers is dependent on the health of the city, which could be enhanced through responsive planning and *active design*[xxxvi] measures, such as promoting physical activities through design. Healthy planning and design can help combat against the negative impact of the UHI effect and environmental pollution, promote active ageing, promote walking, cycling and exercising amongst citizens, and encourage the use of public space for social activities. In short, a healthy place creates healthy citizens.

5.2 To establish strategic directions to strengthen Hong Kong as a healthy city can reap many tangible benefits, not least, in alleviating the burden on public health services, reducing mortality rates and in promoting the physical and mental wellbeing of the people in a liveable high-density city.

URBAN DESIGN FOR A HEALTHY CITY

5.3 Being a high-density sub-tropical city with hot and humid summer months, human thermal comfort is a key consideration in creating a better city for Hong Kong. The city is currently suffering from the intensifying UHI effects aggravated by global warming. The accelerating increase in urban temperatures and decreasing urban winds have led to an increase in the number of very hot

[xxxvi] "*Active design* is an evidence-based approach to development that identifies urban planning and architecture solutions to support healthy communities" – Center for Active Design (2013).

days and hot nights[xxxvii], energy consumption, thermal discomfort and heat stress-related health problems, etc.

5.4 We must optimise the planning and design of our city to improve the urban climate, and in turn improve our living quality. As established under the UCM Study completed in 2012, the two key parameters to urban climate that can be managed through planning and design are heat (thermal load) and wind (dynamic potential). Through analysing six major physical and development variables affecting thermal load (which are building volume, topography and green spaces) and dynamic potential (ground coverage, natural landscape and proximity to openness), coupled with territorial-wide wind information, an Urban Climatic Planning Recommendation Map for Hong Kong (UC-ReMap) with five Urban Climatic Planning Zones (UCPZ) was formulated as part of the UCM Study [**Figures 50 and 51**].

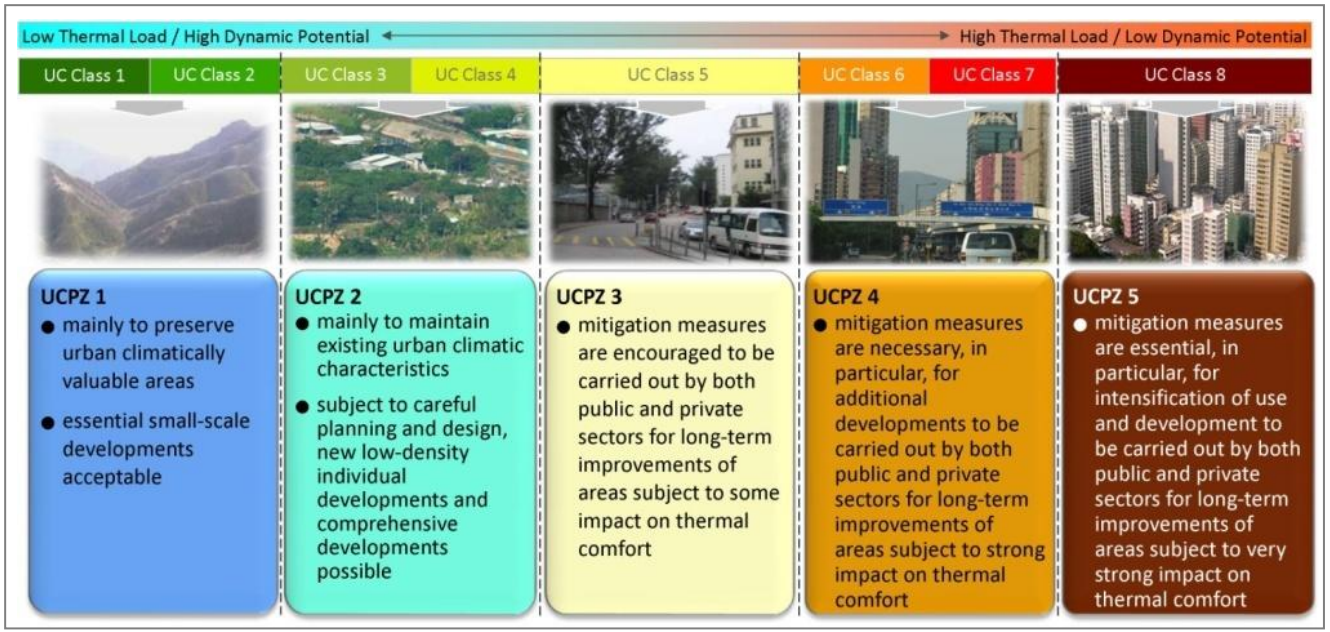


Figure 50 Urban Climatic Planning Recommendation Zones for Hong Kong

[xxxvii] A very hot day is where the daily maximum temperature is 33 degrees Celsius or above. A hot night is where the daily minimum temperature is 28 degrees Celsius or above.

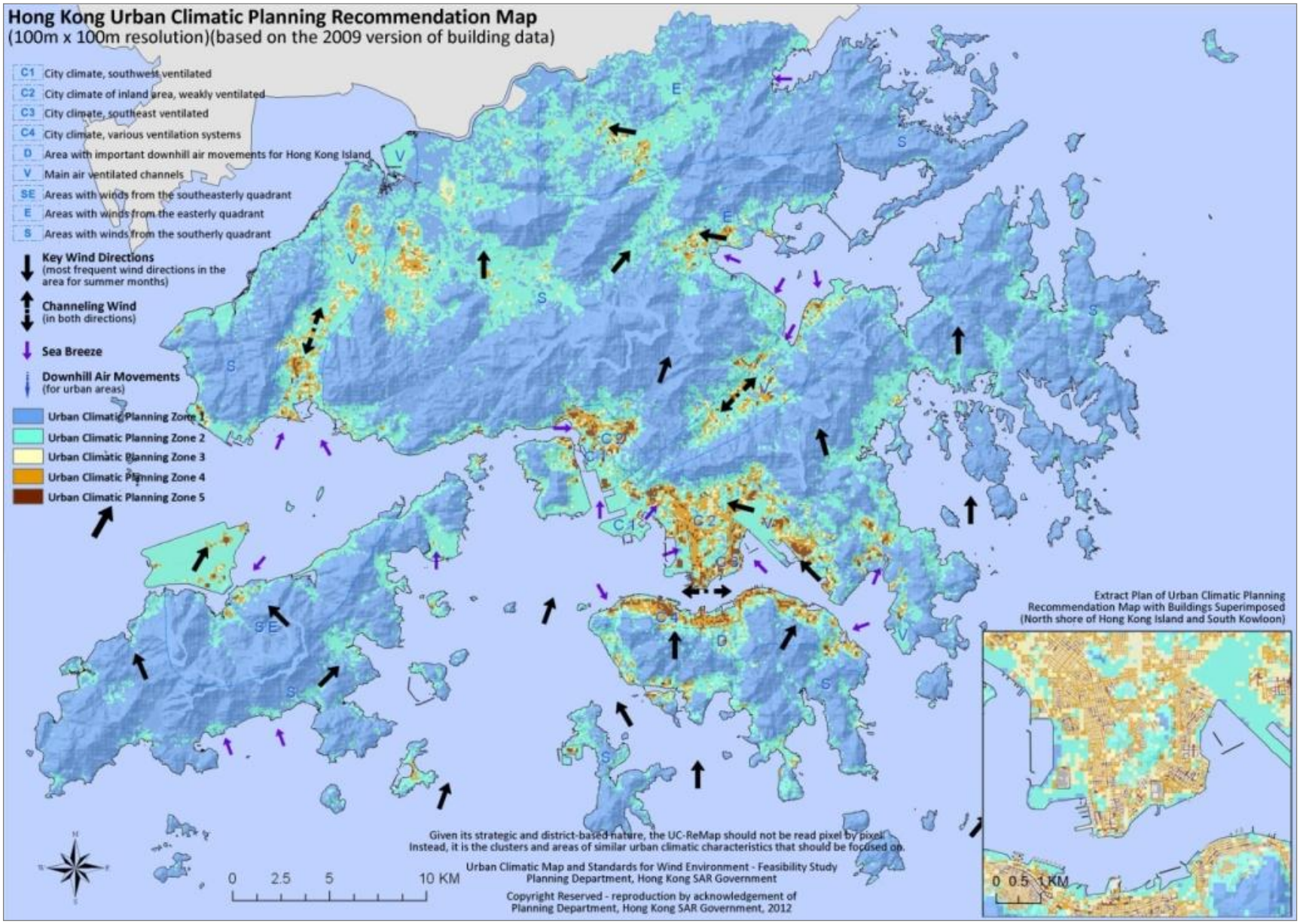


Figure 51 Urban Climatic Planning Recommendation Map for Hong Kong

5.5 In general, the valuable urban climatic characteristics of UCPZ 1, which are cooler areas on higher ground and with better wind environment, should be preserved as far as possible. Opportunities for mitigation within UCPZs 3, 4 and 5, which are subject to high thermal load and low dynamic potential, should be maximised where appropriate. Low-rise and low-density areas within the urban area can provide spatial and visual reliefs within the high-density city, and which could bring far-reaching benefits for general comfort and well-being should be preserved as far as possible. Looking into the future, the majority of Hong Kong's long-term development needs may be accommodated in UCPZ 2 subject to prudent planning and design measures of the new development areas so as to maintain the existing urban climatic characteristics.

5.6 Based on the findings and scientific research of the UCM Study, six broad categories of urban climatic improvement measures have been proposed, including the optimisation of greening, improving building permeability, reducing ground coverage, improving proximity and connectivity to openness, and regulation of building volumes and building heights [**Figure 52**].

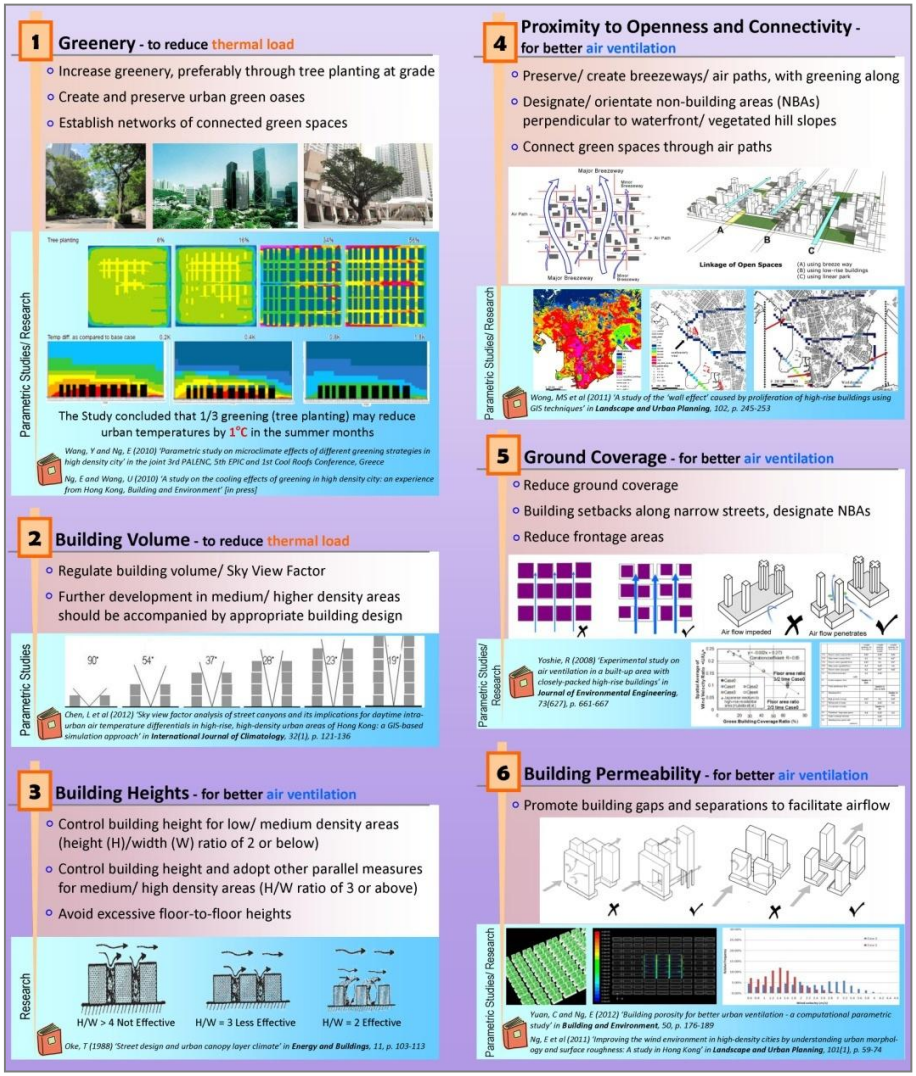


Figure 52 The Proposed Urban Climatic Improvement Measures

5.7 As a strategic direction, these improvement measures could be gradually translated into responsive planning and design measures, including the sensitive disposition of urban blocks, building setbacks, street orientation, street widening, creation and preservation of breezeway and air paths, strengthening urban permeability, variation and gradation in building height profiles, and maximising greening, etc. In fact, some of these measures have been systematically implemented in the planning and design of Hong Kong since the promulgation of a technical circular on air ventilation assessment[29] and with the incorporation of air ventilation guidelines into the UDG of the HKPSG in 2006. The findings and recommendations of the UCM Study will be suitably incorporated in the HKPSG in due course, and the current sections on air ventilation will also be updated. The key for building up a healthy city for the future is to systematically and gradually retrofit parts of the densely developed urban area with less than desirable urban climatic conditions, while promoting responsive development in new areas suitable for future strategic growth.

URBAN DESIGN FOR HEALTHY PEOPLE

Active Design

5.8 Public health and hygiene has been one of the key goals of the town planning discipline. The outbreak of the bubonic plague at the Tai Ping Shan area in 1894 saw the emergence of systematic planning and the building codes in Hong Kong as an effective means to prevent and combat the spread of infectious diseases, as well as to enhance environmental hygiene standards. While responsive planning and design is now part and parcel of modern day city development, the attentions of health-conscious world cities have gradually switched to promoting the health of citizens and handling other public health issues prevalent of our time, such as heart diseases, cerebrovascular diseases, diabetes, colorectal cancer, and other related chronic illnesses.

5.9 Lack of exercise is considered one of the risk factors for the aforementioned diseases, amongst other diseases[30]. To put this into perspective, the first four aforementioned diseases accounted for 6,405, 3,336, 2,034 and 390 deaths respectively in Hong Kong in 2014; amounting to over a quarter of all registered deaths[31]. Moreover, for the age cohort of 18 to 64, 62.5% were found to have

inadequate amount of daily physical activity as measured against World Health Organisation's recommended standard, and 39.0% were considered over-weight or obese in 2014.

5.10 To improve the health of our citizens, we need to turn the focus of our future planning and design to the concept of active design. Active design is both an approach and an ethos in promoting physical activity and health through responsive design[32]. The concept should percolate to all aspects of planning, urban design and building design with the overarching aim to promote walking, cycling and exercising by improving accessibility, walkability and cyclability and reducing the exposure to roadside pollution. In terms of the former consideration, the accessibility to public transport nodes/ public amenities/ recreational facilities should be maximised. As for walkability, compatible mixed uses, active street frontages, pedestrian-friendly environments, and pleasant streetscape design that create an attractive walking environment should be encouraged. At a building scale, movement between floors could be encouraged by incorporating welcoming and well-lit interior staircases. In terms of cyclability, cycling as a viable short-distance travel mode in the non-urban areas should continue to be promoted where appropriate. More details on these components to active design can be found in the previous chapters. Overall, to strengthen active design will not solve the public health problems on its own, but it will invariably help contribute to healthier living in our high-density city.

Public Open Spaces (POS)

5.11 POS are essential points of respite and visual/ spatial relief within our liveable high-density city, which bring enormous social, physical and mental health benefits to urban dwellers [**Figure 53**]. Not only are POS the main source of outdoor recreational, leisure and sport activities for the public, in an ageing society[xxxviii], POS also act as an invaluable place for social interaction and chance encounters for the elderly, which in turn enhances their general wellbeing, alleviates their sense of isolation and reduces their vulnerability. Given that the elderly spend most of their time within the familiar surroundings of their neighbourhood, POS located within walking distance of residences are thus vitally important to the well-being of our rapidly ageing population and helps to promote

[xxxviii] According to C&SD's latest projections, the proportion of elderly population (aged 65 or above) will increase from about 15% in mid-2014 to 33% in mid-2044 and 36% in mid-2064. The population of the old-old (i.e. aged 85 and above) will increase from the current 2.2% to 10.1% in 2064 – Census and Statistics Department (2015) *Hong Kong Population Projections 2015-2064*. Hong Kong: HKSAR Government.

"active ageing". All in all, POS is a key component of our inclusive and supportive city.

Figure 53 Public Open Space in a Healthy City

5.12 POS are conducive to creating a healthy city and healthy people. At the city level, landscaped POS provides visual/ spatial relief and acts as the all-important "lungs" of our high-density city. As established in the UCM Study, where connected via green connectors and landscape corridors, a network of POS could have enormous therapeutic qualities for the built environment by facilitating wind flow and reducing the thermal load of the city. In particular, researchers have shown that with considerable greening (i.e. 33% of tree coverage), urban temperatures may reduce by up to 1^{o}C in the summer months[xxxix].

5.13 Existing POS within the built-up areas should continue to be protected and enhanced as far as possible. In the interest of space optimisation, the design of POS should also include considerations of robustness so as to encourage their maximum usage by different ages and under different weather conditions, seasons and time of the day. We should endeavour to increase the open space provision to promote active lifestyle for all sectors of the community.

5.14 Microclimate and environmental quality considerations should be duly considered in the design of POS in the future. For instance, the Housing Department has been employing micro-climatic analysis in assessing various environmental quality factors, such as air ventilation, sunlight intake and noise pollution, etc in creating more pleasant public spaces and residential units amongst their housing estates. Such responsive spatial design approaches should be encouraged in the future.

[xxxix] See Wang, Y and Ng, E (2010) "*Parametric study on microclimate effects of different greening strategies in high density city*" in the Joint 3rd PALENC, 5th EPIC and 1st Cool Roofs Conference, Greece (1 October 2010).

PLANNING FOR A HEALTHY CITY: KEY STRATEGIC DIRECTIONS AND ACTIONS

5.15 In the interest of promoting a healthy city for Hong Kong, we seek to further incorporate urban climatic and air ventilation considerations in planning and urban design so as to alleviate the UHI effect and to respond to climate change. We seek to incorporate active design considerations in shaping the built environment to promote physical activities and health, including walking and cycling, and to promote a healthy lifestyle through responsive design. Moreover, as mentioned in chapter 3, promoting walkability and cyclability within our high-density city (as well as urban forestry and roadside landscaping) could help encourage more people to switch from vehicular modes of travel to green mobility options, thus further reducing the exposure of pedestrians and cyclists to roadside air pollution. We also need to rekindle our connection with nature in the city, while at the same time strengthen our continued commitment in enhancing biodiversity and promoting environmentally-friendly initiatives, and in creating a clean and healthy built environment. The key proposed strategic directions and actions in planning for a healthy city are as follows:

Key Strategic Directions	Key Actions
Improving the urban climate by incorporating urban climatic and air ventilation considerations	• to strengthen urban climatic and air ventilation considerations in the planning and design of new development areas and to retrofit the densely developed urban areas having due regard to the suggestions in the Hong Kong UC-ReMap • to update the current Technical Circular on Air Ventilation Assessment and the relevant HKPSG
Promoting active design	• to embrace active design in promoting physical activities and health through urban design and building design • to appropriately increase open space provision • to promote accessibility to recreational facilities (e.g. country parks and sports facilities) • to provide a comfortable walking and cycling environment

6 REINVENTING PUBLIC SPACE AND ENHANCING PUBLIC FACILITIES

> **"*Public spaces* as expression of human endeavour and artefacts of the social world are the physical and metaphysical heart of the cities, thus providing channels for movement, nodes of communication and common ground for cultural activities."**
>
> William H Whyte (1980)
> *The Social Life of Small Urban Spaces*[33]

Public Space

6.1 Public space embraces a whole spectrum of spaces from "semi-public" to "public" spaces. It could be "spaces between buildings" (streets, pavements, landscaped decks, footbridges, squares, and precincts, etc), parks, podiums, rooftops, and country parks, etc. In a high-density urban living environment like Hong Kong, there is limited scope for expanding the per capita private space. Public space thus play a pivotal role in uplifting our liveability, be it as a meeting place, a place for exercise/ respite or a place for sprouting creative ideas [**Figure 54**]. Good public spaces are effectively an extension of our personal construct of space – "urban commons" that are shared by all, forming part and parcel of the urban experience.

Figure 54 The Role of Public Space in Uplifting our Liveability

6.2 Given their enormous potentials in uplifting the liveability of our city, we need to broaden the position of our public spaces as not just functional spaces for purposeful activities, but as welcoming public places for the people

and a place suitable for appropriate optional[xl] and social activities – an on-going design direction championed in many world cities. There should also be synergy between public and private spaces.

6.3 In this regard, we call for a holistic and open mindset in construing the public space, such as a review of the existing policies, guidelines, functions, designs, provisions and management of public spaces. The Government could play an enabling role in facilitating collaborative efforts and shared contribution in making our public space not only functional, but also welcoming for everyone to enjoy.

Quantitative Considerations for POS

6.4 POS is the definitive component of public space and plays a pivotal role in our well-being, be it in our childhood, adulthood or "elderhood" [**Figure 55**]. In recent years, the public and some non-government organisations have called for a higher POS standard for Hong Kong due to our lagging performance in comparison with other cities. In pursuit of a liveable, competitive and sustainable "Asia's World City", Hong Kong would need to pay greater attention to the POS provision, both in terms of quantity and quality.

Figure 55 Public Open Spaces in our Liveable High-density City

6.5 In terms of quantity, the current open space per capita standard prescribed in the HKPSG is 2m^2 per person. As at 2012, the open space per capita of Hong Kong was about 2.7m^2 per person. If private open space within large private developments was excluded, the open space per capita of Hong Kong would be reduced to about 2.46m^2 per person. Furthermore, out of 18 districts, it was found that the LO per capita of four districts (i.e. Central and Western, Wanchai, Yau Tsim

[xl] *Optional activities* are largely recreational activities that people might like to engage in when the outdoor conditions are good, and more importantly, when the physical environment is of a high quality – Gehl, Jan (2010) *Cities for People*. Washington, DC: Island Press. *p*.20

Mong and Kowloon City districts) were below 1m^2 per person and district open space per capita of six districts (i.e. Kwun Tong, Kwai Tsing, Tsuen Wan, North, Yuen Long and Sai Kung districts) were below 1m^2 per person. Evidently, we should strive to create more POS, especially in districts with a current shortfall.

6.6 In the interest of promoting outdoor recreation, leisure and social activities, we should investigate the scope to gradually and systematically increase the open space per capita standard for Hong Kong in the long-run, including the prudent planning of NDAs and the retrofitting of the urban areas. As a starting point, the open space per capita standard of 2m^2 per person could be increased by 25% to 2.5m^2 per person. In recognition of Hong Kong's volumetric[xli] quality, an innovative approach could be introduced whereby the additional open spaces could be positioned at suitable locations at above-grade levels, including podium level, within towers and/or at roof level. For more discussion on the quantitative considerations for POS, please refer to the *"Green and Blue Space Conceptual Framework"* topical paper.

Qualitative Considerations for POS

6.7 As for the quality of public spaces and POS, we should endeavour to make them work better and work more for their intended users. In the interest of optimising the use of POS by the public and to cater to the needs of users, public life studies could be carried out at selected POS to understand the user experience and their needs[xlii]. In general, we should continue to explore ways to further improve and broaden the amenity and usage of public spaces and POS.

6.8 Although different users have different requirements, there are certain invariant qualities that are treasured amongst all users of public spaces and POS, such as comfortable seating, sufficient shelter, and a mixture of active and passive spaces, etc. However, the provision of such amenities is often less than desirable in Hong Kong. In promoting more inclusive and welcoming public spaces and POS, opportunities for the provision of appropriate public amenities should be maximised

[xli] The "*volumetric* qualities of Hong Kong [are]…multi-level activity, deck or bridge connection between buildings or from building to sloping ground" – Shelton, Barrie et al (2011) The Making of Hong Kong – From Vertical to Volumetric. Abingdon: Routledge. p.103.

[xlii] For instance, as part of the '*Design Our Dream Park*' initiative – a year-long community-based project organised by the Hong Kong Public Space Initiative – surveys and interviews were conducted at a POS in Yau Ma Tei to gauge the community's aspirations of public seating. The initiative resulted in 15 moveable chairs being temporarily installed, alongside a range of other community activities and events.

wherever possible. Reviews of the existing local and overseas legislations/ regulations/ guidelines/ best practices on the provision of public amenities in POS and public space, and public life survey(s) and/or consultation on such provisions in Hong Kong could also be undertaken. The empirical basis from these investigations could be used to formulate more robust and comprehensive guidance and/or standards for Hong Kong.

6.9 Other qualitative considerations on the planning, design and provision of public space and POS in planning for a liveable high-density city are as follows:

(a) existing public space and POS within the densely developed urban areas should continue to be protected and enhanced as far as possible;

(b) to facilitate easy access to public space and POS, they should be located in walkable and accessible locations and be provided at regular intervals, preferably connected by green connectors and landscaped corridors;

(c) the design of public space and POS should include considerations of robustness so as to encourage their maximum usage under different weather conditions, seasons and time of the day. Temporary installations and/or relaxation of particular user restrictions at selected POS could be carried out to investigate the scope to further enhance the robustness and public amenities of POS in the future;

(d) microclimate and environmental quality considerations should be duly considered in the design of POS; and

(e) opportunities for the provision of appropriate public amenities and greening in public space and POS should be maximised wherever possible.

6.10 Overall, as a future strategic direction, we should strive to expand our public space and POS when opportunities arise in the course of retrofitting the densely developed urban areas, and optimise/set aside more public space in new development areas.

Public Facilities

6.11 Besides public spaces and POS, there is also a need to improve certain GIC facility provisions, for instance to improve or redevelop substandard facilities (e.g. old/

substandard schools), to enhance the space provision of some facilities (e.g. more spaces for new kindergartens), and to cater for changing demographic needs (e.g. more neighbourhood elderly care facilities to cater for our ageing population). In order to cater for such needs, more land and space would inevitably be required in the long run.

6.12 In terms of G/IC provision, for the older generation new towns such as Sha Tin, the provision of G/IC land, other than those special uses/facilities which are considered as policy-driven land uses, is estimated to be about 2.2m^2 per person, while such provision for the newer generation NDAs such as Kwu Tung North is higher at 3.5m^2 per person. As a starting point, the higher end of the range at 3.5m^2 per person for the purpose of planning for land requirement for G/IC uses could be considered in our future strategic planning.

REINVENTING PUBLIC SPACE AND ENHANCING PUBLIC FACILITIES: KEY STRATEGIC DIRECTIONS AND ACTIONS

6.13 The key proposed strategic directions and actions in reinventing public space and enhancing public facilities are highlighted as follows:

Key Strategic Directions	Key Actions
Reinventing the public space	• to conduct a review of the existing policies, guidance, functions, quality, designs, accessibility, provision and management of public space including public parks and public streets, with a view to embracing public space as a key element of providing a quality living environment
Reviewing open space and public facility provision	• to explore the scope for appropriately increasing the open space per capita standard under the HKPSG • to review the planning standards for relevant G/IC facilities under the HKPSG

7 REJUVENATING THE URBAN FABRIC

> **"Many parts of the urban core are in need of *rejuvenation*. Retrofitting the existing densely developed urban areas to enhance liveability will be a challenging task."**

7.1 With a growing and rapidly ageing population and building stock, Hong Kong is experiencing a "double ageing" phenomenon that will persist in the years ahead. While the former phenomenon will be discussed in detail in the "*An Inclusive and Supportive City for All Ages*" topical paper, it is the focus of this chapter to discuss the latter phenomenon.

7.2 The rapid economic growth in the post-war decades had led to a large construction boom in Hong Kong. However, as these buildings age, we are now faced with a rapidly ageing building stock, especially in the densely developed urban areas. Currently, there are about 1,100 private housing units aged 70 or above. Assuming no demolition were to take place, by the year 2046, it is estimated that this number will rise to about 326,000 units [**Figure 56**]. This is nearly 300 times the building stock of the same age in 2016. While this problem will become more and more acute in the years ahead, our current pace of urban renewal remains relatively modest.

7.3 To compound the problem, urban renewal efforts in Hong Kong often have to confront with many challenges, not least the following:

(a) limited or no residual development potential remaining for the redevelopment sites, especially for those with smaller footprints, which would sometimes lead to a lower household unit yield than before;

(b) multiple and fragmented ownership, which makes it difficult to assemble property interests;

(c) limited developable space in the densely developed urban area to decant or displace the affected households; and

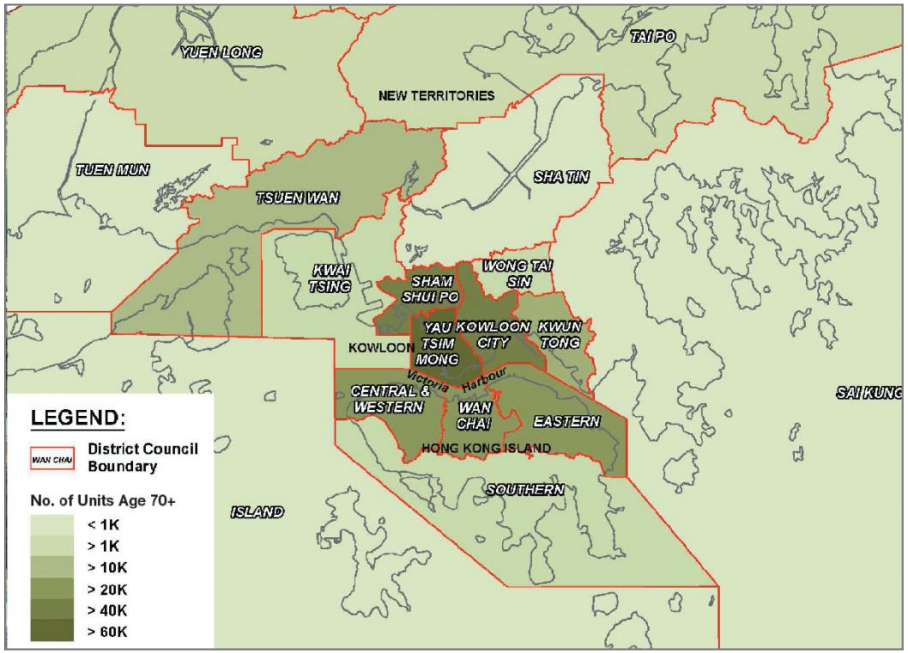


Figure 56 Private Housing Units aged 70 or above by 2046 (by Districts)

(d) generally a longer lead time for completion as compared to developments on greenfield sites; in fact, it is not uncommon for redevelopment projects to take over a decade to complete.

Moreover, all these issues take place at a neighbourhood level where there are many competing community interests at play. As such, rejuvenation initiatives should endeavour to respect the neighbourhood characteristics and promote better bonding of the neighbourhood through planning, urban design and other means as far as practicable.

7.4 In the local context, the process of redevelopment will continue to require private initiatives. However, given the enormous magnitude of our ageing building stock and the current modest pace of urban renewal, the Government also has to step up urban regeneration efforts and policies to rejuvenate the extensive old urban fabric to improve the living environment [**Figure 57**]. On one hand, we should boost building management, repair and maintenance initiatives to extend the life span of buildings[xliii]; while on the other hand, we also need to facilitate redevelopment, rehabilitation, revitalisation and preservation initiatives on both project and area bases.

[xliii] The Government has adopted a multi-pronged approach to promote and ensure proper repair and maintenance of buildings by property owners. Among others, the Buildings Department implements the Mandatory Building Inspection Scheme and the Mandatory Window Inspection Scheme which require owners to inspect and carry out necessary repairs and maintenance works in their buildings. The Buildings Department, the Urban Renewal Authority and the Hong Kong Housing Society also administer a number of schemes to assist owners in need to discharge their responsibility in repairing and maintaining their buildings.

Figure 57 Ageing Building Stock in Hong Kong

7.5 The rapidly ageing population would contribute towards the ageing building problem. Aged owners may not be able to upkeep the building due to lack of means and knowledge. Even if we could extend the lifespan of old buildings, its condition and design may simply be unfit for the frail elderly, for instance, due to the lack of elevator or universal design. We would need to come up with vigorous measures to tackle this "double ageing phenomenon".

REJUVENATING THE URBAN FABRIC: KEY STRATEGIC DIRECTIONS AND ACTIONS

7.6 The key proposed strategic direction and actions in rejuvenating the urban fabric are proposed as follows:

Key Strategic Direction	Key Actions
Rejuvenating the urban fabric	• to boost building management and maintenance initiatives to extend the life span of buildings • to facilitate redevelopment, rehabilitation, revitalisation and preservation initiatives on both project and area bases • to seek urban improvements while respecting the neighbourhood characteristics and bonding neighbourhoods through planning, urban design and other means

8 CONCLUSION

8.1 This topical paper has outlined a number of key strategic directions and actions under the remit of creating a compact; integrated; unique, diverse, vibrant; and healthy city for Hong Kong, as well as in reinventing public space and enhancing public facilities; and rejuvenating the urban fabric. It is anticipated that the key strategic directions and actions will, alongside other aspects of "*Planning for a Liveable High-Density City*", help promote Hong Kong as a liveable, competitive and sustainable high-density city transcending 2030 and strengthening our position as "Asia's World City".

8.2 Subject to priorities and findings of public engagement, the strategic directions and actions proposed herein will be followed up by the concerned bureaux/ departments, and where appropriate, be informed by follow-up studies and investigations. To implement and promote these "people-oriented" proposals, apart from an enabling government, involvement and collaboration of all relevant parties is indispensable.

ENDNOTES

1. Demographia (2016) *Demographia World Urban Areas 12th Annual Edition.*

2. Mercer (2016) *Quality of Living Ranking.* https://www.imercer.com/content/mobility/quality-of-living-city-rankings.html

3. Clark, Greg and Moir, Emily (2015) *Density: Drivers, Dividends and Debates*. London: Urban Land Institute.

4. Bloomberg (2016) *Most Crowded Cities in 2025: Global Cities* http://www.bloomberg.com/visual-data/best-and-worst//most-crowded-in-2025-global-cities-1

5. LSE Cities (2013) *City Transformation, Urban Age Conference Newspaper*. London School of Economics and Political Science.

6. Intergovernmental Panel on Climate Change (IPCC) (2014) *Climate Change 2014: Mitigation of Climate Change – Working Group III Contribution to the Fifth Assessment Report of the IPCC.* Cambridge: Cambridge University Press.

7. Jacquet, P., Pachauri, R.K. and Tubiana, L. (2010) *Regards sur la terre 2010. L'annuel du development durable: Villes: changer de trajectoire*. Paris: SciencesPo.

8. Jacobs, Jane (1961) *The Death and Life of Great American Cities*. New York: Vintage Books.

9. Van Audenhove, Francois-Joseph et al (2014) *The Future of Urban Mobility 2.0: Imperatives to shape extended mobility ecosystems of tomorrow*. Arthur D. Little.

10. Transport and Housing Bureau (2016) *Hong Kong The Facts: Railway Network*. Hong Kong: HKSAR Government.

11. Highways Department (2016) *Hong Kong Road Network*. http://www.hyd.gov.hk/en/road_and_railway/existing/road_network/road.html

12. Gehl, Jan (2010) *Cities for People*. Washington, DC: Island Press.

13. Leisure and Cultural Services Department (2014) QualiWalk Scheme http://www.lcsd.gov.hk/en/healthy/qualiwalk.html

14. Land Transport Authority (2014) Four times more sheltered walkways by 2018. http://www.lta.gov.sg/apps/news/page.aspx?c=2&id=6dacf291-e0a9-4f26-92d8-b615970d0f05

15. Transport and Housing Bureau (2012) 'LCQ2 *Bicycle Friendly Policy*' at the Legislative Council meeting on 21.11.2012.

16. Primarily defined by Transport Department (2016) *Cycling Information Centre* http://www.td.gov.hk/mini_site/cic/en/index.html

17. Condon, Patrick (2010) *Seven Rules for Sustainable Communities: Design Strategies for the Post-Carbon World.* Washington, DC: Island Press. p.68.

18. Tieben, Hendrik et al (2013) "*How to Create Sustainable Communities in Hong Kong? Inherent Problems of Recent Urban Layouts for Microeconomic Opportunities and Quality of Living*" at the Sustainable Building 2013 Hong Kong Regional Conference, Urban Density & Sustainability.

19. Zukin, Sharon (1995) *The Cultures of Cities.* Cambridge, MA: Blackwell.

20. Lynch, Kevin (1960) *The Image of the City*. Cambridge, MA: MIT Press.

21. Bentley, Ian et al (1985) *Responsive Environments: A Manual for Designers.* London: Architectural Press. p.42.

22. Smith, Peter Cookson (2006) *The Urban Design of Impermanence: Streets, Places and Spaces in Hong Kong*. Hong Kong: MCCM Creations.

23. Lynch, Kevin (1961) *What Time is This Place?*. Cambridge, MA: MIT Press.

24. ICOMOS (1972) '*Resolutions of the Symposium on the Introduction of Contemporary Architecture into Ancient Groups of Buildings*' (The Budapest Resolution) at the 3rd ICOMOS General Assembly.

25. ICOMOS (1931) '*Athens Charter for the Restoration of Historic Monuments'* (The Athens Charter).

26. UNESCO (2003) '*Convention for the Safeguarding of the Intangible Cultural Heritage*' – in particular the provisions in Article 13.

27. Siu, Steven (2013) '*Change amid Stability: Rethinking the Planning and Design Guidelines for 'Area-wide' Conservation in Hong Kong*'. Hong Kong: HKU.

28. Barton, Hugh and Tsourou, Catherine (2000) *Healthy Urban Planning*. Abingdon: Spon Press.

29. Housing, Planning and Lands Bureau and Environment, Transport and Works Bureau (2006) *Technical Circular No. 1/06: Air Ventilation Assessments*. Hong Kong: HKSAR Government.

30. Department of Health (2008) *Fact Sheet on Physical Activity*. http://www.dh.gov.hk/english/useful/useful_dykt/useful_dykt_exercise.html

31. Department of Health (2016) *Health Facts of Hong Kong*. Hong Kong: HKSAR Government.

32. City of New York (2010) *Active Design Guidelines: Promoting Physical Activity and Health in Design*. New York: City of New York.

33. Whyte, William (1980) *The Social Life of Small Urban Spaces.* New York: Project for Public Spaces.