

URBP7004 - Strategic Planning Studio
STRATEGIC PLANNING PROPOSAL
FOR PLANNING A HEALTHY
HONG KONG WITH SMART SOLUTIONS
FINAL REPORT

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URBP7004 - Strategic Planning Studio

M.Sc. in Urban Planning

The Department of Urban Planning and Design

Faculty of Architecture

The University of Hong Kong

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Strategic Planning Proposal for Planning a Healthy
Hong Kong with Smart Solutions

Submitted By

PlanGen Consultancy Services

17th May 2021

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PlanGen is a multidisciplinary fresh consultancy firm comprise of resource persons specialised in various deciplines related to physical development.

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Executive Summary

The current pandemic has inspired our Consultancy to revisit the importance of healthy city planning in addressing the future needs of local healthy development. Although Hong Kong is generally performing well in its position as a healthy city around the globe, more effort is needed to accommodate concerns related to physical inactivity, deteriorating mental well-being and intensifying health inequality.

This Final Report submitted by the PlanGen Consultancy Services consolidates the information gathered from the previous Inception Report and Working Paper, striving to offer comprehensive recommendations for the strategic long-term planning for a healthy city in Hong Kong.

The strategic plan - Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030 has acknowledged various planning and development challenges and set out forward-looking actions to shape the built environment. It stipulates the essence of healthy city planning as a scope under the building block of “planning for a liveable high-density city”.

Synthesising the takeaways from our baseline analysis on Hong Kong’s planning for healthy city, problems and insufficiency in planning relating to **five dimensions of the built environment** that adversely influence Hong Kong’s healthy city status are identified as follows:

1. Land Use

- 1.1 Imbalance of Home-Job Distribution
- 1.2 Flexibility of Land Use

2. Housing

- 3.1 Exacerbating Nano-Flats Problems
- 3.2 Substandard Living Environments

3. Transport

- 4.1 Unfavourable Pedestrian Environment
- 4.2 Recreational-oriented Cycling Policies
- 4.3 Limited Functions of Streets

4. Open Space

- 4.1 Insufficient Community Open Space for Active Exercise
- 4.2 Improvement needed for Open Space Design

5. Healthcare Facilities

- 5.1 Accessibility and Coverage of Existing Healthcare Facilities
- 5.2 Further Emphasis on Preventive Healthcare

Further strengthening our analysis with the comparative analyses based on case studies covering the approaches adopted by London, Paris and Singapore, in which the applicability of those measures in Hong Kong's context is examined, and the interviews conducted with key informants, **four strategic directions and eight corresponding actions** are consequently formulated:

1. Strengthen Planning Guidelines to Promote Healthy Developments

1.1 Health Impact Assessment

1.2 Incorporate Health-related Elements into Existing Standard

2. Empower Flexible Space Usage for Resilience, Emergency and Health Practices

2.1 Live-Work Development Model

2.2 Urban Overlay

3. Transform Spaces for Customised Active Mobility

3.1 Transform Street as Spaces for Neighborhood

3.2 Extend and Improve Existing Infrastructure and Reinvent Alternative Routes for Active Mobility

4. Enhance Open Space to Stimulate Active Lifestyle

4.1 Community Farming

4.2 Promote Participatory Design of Open Space

The rationale, aims, actions and timeframe of the implementation plans of different actions as well as potential challenges are included for the consideration of relevant Bureaus and Departments, such that the key actions proposed will be adopted in a holistic approach. It is hoped that the recommendations could enhance the position and priority of healthy city planning in the overall planning strategy of Hong Kong.

TABLE OF CONTENTS

1 Introduction	1
1.1 Background	1
1.2 Study Goal and Objective	1
1.3 Study Framework	2
1.4 Structure of Report	5
2 Literature Review	7
2.1 Strategic Spatial Planning for Health	7
2.2 Healthy City	9
2.3 Smart Solutions for Healthy City Development	10
3 Overview of Healthy City in Hong Kong	14
3.1 A Glimpse of Hong Kong’s Health Situation	14
3.2 Existing Planning Directions and Policies for Healthy City	16
4 Key Issues in Hong Kong	19
4.1 Land Use	19
4.2 Housing	20
4.3 Transport	22
4.4 Open Space	26
4.5 Healthcare Facilities	29
5 Vision for Planning a Healthy Hong Kong	35
6 International Case Studies	36
6.1 Overview	36
6.2 London	36
6.3 Paris	39
6.4 Singapore	43
6.5 Key Takeaways from International Case Studies	47
7 Stakeholders Consultation	49
7.1 Overview	49
7.2 Policies and Institutional Framework for Healthy City	49
7.3 Optimisation of Land Resources	49
7.4 Potential of Public Spaces to Promote Healthy Lifestyle	50
7.5 Differentiation of Conditions in Housing Types	51
7.6 Illustration of Preventive Healthcare Concepts	51
7.7 Essentiality of Public Involvement	52
7.8 Key Takeaways of Stakeholders Consultation	52
8 Strategic Plan for Healthy Hong Kong	54
8.1 Overview	54
8.2 Strengthen Planning Guidelines to Promote Healthy Developments	54
Promoting the Health Impact Assessment in spatial planning	54
Incorporate Health-related Elements into Existing Building Design Standard	64
8.3 Empower Flexible Space Usage for Resilience, Emergency and Healthy Practices	68
Live-work Development Model	68
Urban Overlay	74

8.4 Transform Spaces for Customised Active Mobility	78
Transform Street as Spaces for Neighbourhood	78
Extend and Improve Existing Infrastructure and Reinvent Alternative Routes for Active Mobility	85
8.5 Enhance Open Space to Stimulate Active Lifestyle	90
Community Farming in Hong Kong	90
Promote Participatory Design of Open Space	94
9 Implementation Plan	99
10 Envisioning the Future	101
References	102
Appendix A Team Profile	114
Appendix B Work Programme	118
Appendix C List of Interview	119
Appendix D Gist of Interview	120

LIST OF FIGURES

Figure 1-1: Study Framework of Phase 1	3
Figure 1-2: Study Framework of Phase 2	4
Figure 1-3: Study Framework of Phase 3	5
Figure 2-1: Health Map of Determinants of Health	8
Figure 2-2: Contribution of Different Factors regarding Health Outcomes	8
Figure 2-3: Links between Sustainable Development Goals (SDGs) and Healthy City	9
Figure 2-4: Key Smart Areas identified in Hong Kong’s Smart City Blueprint 2.0	11
Figure 2-5: The Five Key Elements of Smart Health Communities	13
Figure 3-1: Hong Kong’s WHO-5 Wellbeing Index (2015-2020)	15
Figure 4-1: Spatial Distribution of Job and Home in Hong Kong	19
Figure 4-2: Ratio of Licensed Vehicles to Parking Spaces 2006-2016	23
Figure 4-3: Loading Activities and Congested Road Environment in Kwun Tong	24
Figure 4-4: Trip Purposes of Cycling	25
Figure 4-5: Spatial Distribution of Hospitals, Clinics and Health Centres	29
Figure 4-6: Proximity to Hospitals, Clinics & Health Care Centres	30
Figure 4-7: Existing Facilities and Optimal Facilities identified by Zhang et al.	31
Figure 4-8: Distribution of Existing & Proposed District Health Centre	33
Figure 5-1: Strategic Planning Proposal: Vision and Goals	35
Figure 6-1: “15-Minutes City” Framework	40
Figure 6-2: Components of “15-Minutes City”	41
Figure 6-3: Streets of Tomorrow	42
Figure 6-4: Proposed Multifunctional Spaces at Schools	42
Figure 6-5: Crossroads, Transformed into Neighbourhoods	43
Figure 6-6: The 3-E Approach adopted in the HealthySG Taskforce Report for Healthy City Delivery	44
Figure 6-7: The HDB Biophilic Town Framework	44
Figure 6-8: Landscaping for Urban Spaces and High-Rises (LUSH) Programme	45
Figure 6-9: Smart Technology Infrastructure in the Smart and Sustainable Town Model	45
Figure 6-10: Proposed Park Connector Networks in 2030	47
Figure 8-1: The Hierarchy of Urban Health Needs	56
Figure 8-2: Integration between planning and EIA/SEA	60
Figure 8-3: Integration between HIA and SEA in the Plan-making Process	61
Figure 8-4: Integration between HIA and EIA in the Planning Application Process	62
Figure 8-5: BEAM Plus New Buildings & Sustainable Building Design Guidelines	65
Figure 8-6: 10 Concepts under the WELL Building Standard	66
Figure 8-7: Workplace Liquidity	69
Figure 8-8: Possible Locations of Industrial Revitalisation with reference to Industrial Area Assessment	72
Figure 8-9: Possible Locations of Retrofitting of Commercial Spaces according to Office Vacancy Rate	73
Figure 8-10: Undesignated Other Specified Uses in Hung Shui Kiu NDA	74

Figure 8-11: OU(MU) in Yuen Long South NDA	74
Figure 8-12: The Structure of Urban Overlay	75
Figure 8-13: Healthy Streets Indicators and Photo for Demonstration	80
Figure 8-14: Fully Pedestrianised Street in Causeway Bay	81
Figure 8-15: Clusters of Noisy Performances Occupied Pedestrian Spaces in Mong Kok	81
Figure 8-16: Photo Montage showing the Concept of Sheung Wan Fiesta	82
Figure 8-17: Functional Benches at Hung Luen Road	83
Figure 8-18 & 8-19: Existing Conditions on Shau Kei Wan Main Street East and Proposed Pedestrianisation Scheme to Shau Kei Wan Main Street East	84
Figure 8-20: Open Space Loop across Admiralty, Wan Chai and Causeway Bay as Demonstration	85
Figure 8-21: Suitable Areas for Cycling	86
Figure 8-22: Existing Cycling Tracks in Hong Kong	86
Figure 8-23: International Best Practices Related to Improving Safety of Cyclists	87
Figure 8-24: International Best Practices Related to Ancillary Facilities	88
Figure 8-25: Proposed Smart 3D Navigation System	89
Figure 8-26: Empty Planting Pots after Clearance of Crops	91
Figure 8-27: Greening Area in Un Chau Estate	92
Figure 8-28: Community Garden in Tin Yuet Estate	92
Figure 8-29: Vacant Government Sites Available for Applications for Greening and GIC uses	93
Figure 8-30: Bazaars in Northern District	94
Figure 8-31: Role of Citizen with the Use of Urban Data	95
Figure 8-32 & 8-33: Comparison between the Before and After of the Micro-parks Project: Yi Pei Square Playground	96
Figure 8-34: Customer Appreciation Card in the Leisure and Cultural Services Department Managed Open Spaces	96
Figure 8-35: Screenshots of CitySwipe Demonstrating the swipe-to-choose Function	98
Figure 9-1: Phasing Programme of Strategic Actions	99

LIST OF TABLES

Table 2-1: 11 Characteristics of a Healthy City	10
Table 2-2: Key Strategies Proposed in Smart City Blueprint Related to Healthy City Development in Hong Kong's Smart City Blueprint 2.0	12
Table 4-1: Comparison of Green and Open Spaces between Hong Kong and Other Asian World Cities	26
Table 4-2: Top Ten Zoning Area with Underprovision of Public Space	27
Table 4-3: Summary of HKPSG on Healthcare Facilities	32
Table 6-1: Comparability of International Case Studies	36
Table 8-1: Examples of EIA in a Highway Project and Potential associated Health Outcomes	63
Table 8-2: Long-Term Commercial Land Supply After Deducting Major Planned/Committed/Under Advance Planning Supplies	70
Table 8-3: Qualities of Building a Resilient City	75

LIST OF ABBREVIATIONS

CHP	Centre of Health Protection
COVID-19	Coronavirus Disease
CUHK	Chinese University of Hong Kong
DHC	District Health Centre
EIA	Environmental Impact Assessment
GIC	Government, Institution or Community
GIS	Geographical Information System
HIA	Health Impact Assessment
HKIP	Hong Kong Institute of Planners
HKGBC	Hong Kong Green Building Council
HKSAR	Hong Kong Special Administrative Area
HKU	The University of Hong Kong
Hong Kong 2030+	Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030
ICT	Information and Communication Technology
IWBI	International WELL Building Institute
LCSD	Leisure and Cultural Service Department
MiC	Modular Integrated Construction
NCD	Non-Communicable Disease
NDA	New Development Area
NGO	Non-Government Organisation
NHS	United Kingdom National Health Service
OECD	Organisation for Economic Co-operation and Development
POS	Public Open Space
SARS	Severe Acute Respiratory Syndrome
SDG	Sustainable Development Goal
SGA	Strategic Growth Area
SME	Small and Medium Enterprise
UK	United Kingdom
UN	United Nations
US	United States
WHO	World Health Organisation

1. Introduction

1.1. Background

- 1.1.1. As defined by the World Health Organisation (WHO), health emphasises on well-being in terms of physical, mental and social dimensions. As the fundamental asset of living and working, the WHO has committed to promoting Health For All and protecting the fundamental right of health through reducing health inequalities and empowering people to achieve their full capacity in the three dimensions of health.
- 1.1.2. Shaped by the setting of daily life, our health is heavily impacted by the surrounding built environment. It is projected that 66% of the global population will live in urban areas by 2050 (WHO, 2021). The accelerating urbanisation has imposed great challenges to health, with pollution, overcrowded housing, insufficient physical activities, mental stress and unbalanced diets. In view of the challenges, many city governments have put forward the agenda of a healthy city, taking up the opportunities in urban planning to safeguard and strengthen health through shaping the urban fabrics.
- 1.1.3. The first healthy city project in Hong Kong was initiated in 1997 (Department of Health Hong Kong, 2007), featuring concerted efforts in engaging the community to promote health awareness at the district level. The outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003 has expedited the health movement in the city. With the territorial effect, the government has issued the “Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” (SAP) in 2018, and later committed to the global network of Partnership for Healthy Cities, marking the milestones of the healthy city development in Hong Kong.
- 1.1.4. In spite of the concerted efforts in promoting healthy city development, the prevailing global health crisis of COVID-19 has underlined the vulnerabilities of the city in safeguarding the citizens’ health, bringing over 11,000 confirmed cases and 210 deaths. This has expedited the discussion on the development of healthy Hong Kong and strategic planning for the “New Normal” with the consideration of urban resilience. The unprecedented pandemic does not only assail the cities, but also bring a golden opportunity of making drastic changes towards more equitable, sustainable and resilient healthy cities, integrating smart cutting-edge technologies with planning.

1.2. Study Goal and Objective

- 1.2.1. To seize the opportunities brought by the pandemic and address the future needs of health development in society, this study aims to formulate a holistic and smart planning strategy for the development of a healthier Hong Kong. With the consideration of the strategic plan Hong

Kong 2030+, existing policies, emerging trends and innovations, strategic planning directions and actions are proposed to promote healthy city development in Hong Kong. To achieve the above-mentioned study goal, this strategic reports aims:

- To critically review the theoretical literature concerning the concept of Healthy City;
- To review the practices of Healthy City development in Hong Kong;
- To identify the key issues and possible areas or directions of improvement to strategic planning in Hong Kong;
- To study and review international best practices in strategic planning for healthy cities;
- To identify and evaluate opinions and aspirations of relevant stakeholders on improving strategic spatial planning of a healthy city in Hong Kong;
- To recommend appropriate improvements to strategic spatial planning of healthy city in Hong Kong; and
- To recommend the appropriate steps of implementing the suggested recommendations.

1.3. Study Framework

- 1.3.1. This strategic report is structured as a three-stage study progress, spanning from mid-January to mid-May (i.e. the 17th May 2021). The three stages of study consist of an inception report, a working paper, and a final report. Qualitative approach is adopted in the abovementioned stages, to accomplish the study goals and objectives. Details of each stages are as follows:

Stage 1: Inception Report

- 1.3.2. In the beginning, our Consultancy targets on contextualising the concepts of “Healthy City”. Probing into the theoretical perspective of “Healthy City”, the Consultancy has identified its scope of definition and the impacts brought by the current COVID-19 pandemic. The Consultancy has also identified several related correlates contributing to the development of a “Healthy City”, in order to have a better focus on the issues.
- 1.3.3. With the understanding of concepts and framework of “Healthy City”, the Consultancy took a step forward in achieving the next study objectives. To review practices of “Healthy City” development in Hong Kong, the Consultancy examined the Hong Kong 2030+ strategic plan, reports from WHO, as well as the related official policy documents. Coupling with the conceptual understanding from literature, the Consultancy have, thus, identified issues deterring Hong Kong from being a healthier city with holistic development.
- 1.3.4. To have a completed working process in stage 1, the Consultancy have also designed and illustrated the approaches and methodologies of this study. Methodologies such as international case-studies and key informant interviews are adopted in the later stage of work. Details of these methodologies are mentioned in the later sessions.

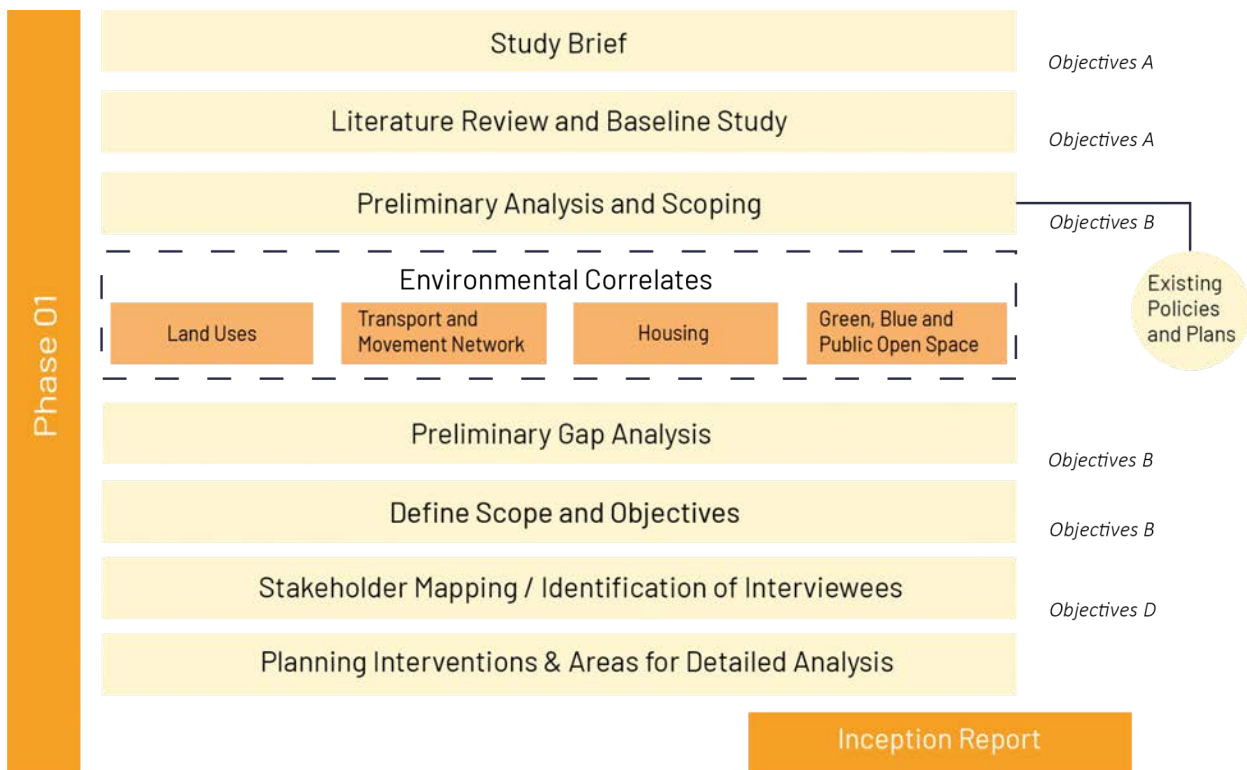


Figure 1-1: Study Framework of Phase 1

Source: PlanGen, 2021

Stage 2: Working Paper

- 1.3.5. In order to have a better understanding on the related issues in the local context, the Consultancy has adopted two approaches in the stage 2 of work: international case studies, and stakeholders consultation through interviews. Based on the findings from this stage, preliminary recommendations were further suggested by the Consultancy.

Working Paper: International Case Studies

- 1.3.6. To start with, to grasp the international trends in “Healthy City” development and to study strategic planning gaps between Hong Kong and competitive cities, the Consultancy conducted three international case studies. Not only do these case studies help spotlighting the best practices from other countries, but they also enable the Consultancy to draw insights for the Healthy City development in Hong Kong. After studying the related international cases, the Consultancy compared the local approaches and performances with the international cities. Thus, preliminary areas for potential improvement were identified by the Consultancy.
- 1.3.7. The abovementioned international case studies conducted by the Consultancy were the healthy city plans from three metropolises across the globe, London, Paris, and Singapore respectively. They share similarities with the local context, and these cases provided insights to the Consultancy on planning a healthier Hong Kong. Details will further be discussed and illustrated in Section 7.

Working Paper: Stakeholders Consultation

- 1.3.8. Apart from the international case studies, the Consultancy also conducted interviews with experts and stakeholders from different sectors. The interview sessions being held were to further understand the current practices of planning a healthier Hong Kong by filling the knowledge gaps, with the aids of interviewees’ experience and specialised knowledge. Primary data collected helped the Consultancy recognise the current practices, approaches and plans of related issues. Additionally, the interview sessions also helped validate the preliminary problem identification and recommendations by the Consultancy.
- 1.3.9. In this stage of work, 10 interview sessions were held between the 16th March 2021 to 3rd April 2021. Due to the impacts brought by the current pandemic, some interviews were being held online. 10 interviewees were mainly classified in six sectors, including academia, planning professions, healthcare specialist, digital health specialists, politician, and technology specialists. Appendix C illustrates the background of interviewees. By having such numbers of interview sessions, the Consultancy aims at studying the issues with a more comprehensive and holistic approach.
- 1.3.10. Primary findings from this stage of work helps the Consultancy formulate the preliminary recommendations on the “Healthy City” development in Hong Kong. The final stage of work mentioned in the later part has consolidated the Consultancy’s suggestions.

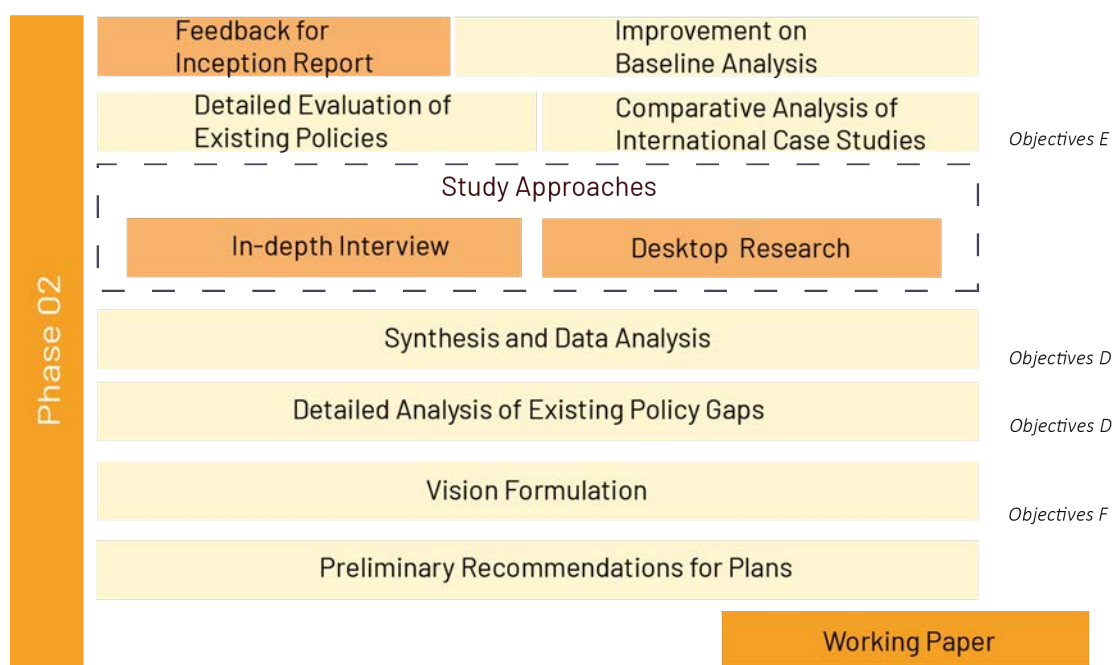


Figure 1-2: Study Framework of Phase 2
Source: PlanGen, 2021

Stage 3: Final Report

- 1.3.11. As mentioned, the Consultancy aims at recommending appropriate improvements for implementations in the final stage of work. Coupling the findings from theoretical literature, international case-studies and stakeholders consultation, the Consultancy have formulated four strategic directions. Implementation plans and suggestions for each strategic direction are also outlined.
- 1.3.12. This final report complements the strategic report Hong Kong 2030+ published by the Planning Department, Hong Kong. Consolidated by the primary findings, the recommendations proposed by the consultant aims to be comprehensive, workable, and supplementary with the Hong Kong 2030+.
- 1.3.13. The abovementioned stages have framed the study process of this strategic report. In the following section, the structure of this final report will be illustrated, as a guide to this strategic report.

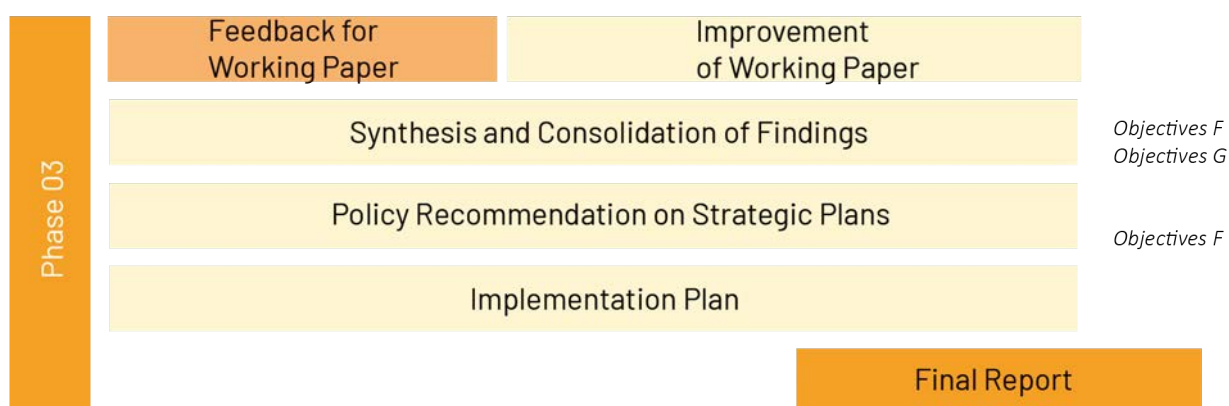


Figure 1-3: Study Framework of Phase 3
Source: PlanGen, 2021

1.4. Structure of Report

- 1.4.1. This final strategic proposal on “Planning a Healthy Hong Kong with Smart Solutions” has been set out in four sections. These sections focus on the fundamental elements of a healthy city planning, such as the concepts, baseline studies, and proposed strategies that have been identified in previous working papers. The first of the following chapters illustrates baseline context and related concepts, the second identifies the planning vision and strategic directions, the third summarises the takeaway from case studies and key informant interviews, and the last outlines the proposed planning strategies and implementation plans. Details are as follows:

Section 1 Baseline Context and Vision Formulation

Chapter 2: Literature Review

- Understanding the concepts and theoretical framework of a “Healthy City”

Chapter 3: Overview of Healthy City in Hong Kong

- Examining the current trends, processes, and approaches of current “Healthy City” planning in Hong Kong

Chapter 4: Key Issues in Hong Kong

- Identifying what can be done more in relation to developing a healthy city with five correlates

Chapter 5: Vision for Planning a Healthy Hong Kong

- Illustrating the vision of this study: Health For All

Section 2 Primary Data Findings and Key Takeaways

Chapter 6: International Case Studies

- Probing into the best practices on “Healthy City” development in overseas countries.

Chapter 7: Stakeholders Consultation

- Describing the “Healthy City” knowledge and information on current practices by the related experts.

Section 3 Planning Choices and Implementation

Chapter 8: Strategic Plan for Healthy Hong Kong

- Illustrating four strategic planning directions as below:
 - Strengthen Planning Guidelines to Promote Healthy Developments
 - Empower Flexible Space Usage for Resilience, Emergency and Healthy Practices
 - Transform Spaces for Customised Active Mobility
 - Enhance Open Space to Stimulate Active Lifestyle

Chapter 9: Implementation Plan

- Illustrating the time-frame of proposed strategic actions

Section 4 Concluding Remarks

Chapter 10: Envisioning the future

- Setting a concluding remarks with visualising the future development of Healthy City in Hong Kong

2. Literature Review

2.1. Strategic Spatial Planning for Health

- 2.1.1. There exists an increasing importance of the concept of “health” in cities’ political agenda. According to the Constitution of WHO (1946), “health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. In particular, physical health issues can be further categorised into NCDs and communicable diseases. Health is a fundamental right and should be considered beyond mortality and morbidity.
- 2.1.2. Health is at the centre of urban planning. Referencing the Town Planning Ordinance (Cap. 131), the aim of town planning in Hong Kong is “to promote the health, safety, convenience and general welfare of the community”. This implied that health has always been embedded in the considerations of land use allocation and controls on development intensity and built form. In particular, strategic planning is at the top hierarchy of plans in Hong Kong, which provides planning directions and implications for future development.
- 2.1.3. Strategic spatial planning refers to “a transformative and integrative public sector-led, but co-productive, socio-spatial process” (Albrechts, 2013, p.52), which involves four phases within the planning process—diagnosis, formulation, implementation, and monitoring and evaluation—that shapes, frames and reframes the future of a place (Albrechts, 2013; UN-Habitat and WHO, 2020). Hong Kong’s strategic planning has been implemented at the territorial level with a long history, from the Abercrombie Plan in 1948 to the latest Hong Kong 2030+.
- 2.1.4. Strategic planning for health can act as a spatial vaccine to bring positive health outcomes throughout the four planning phases. Social, economic, and environmental determinants as illustrated on the health map (See Figure 2-1) are considered as the “causes of the causes” of illness which highlights the importance of urban planning in impacting health outcomes and health equity (UN-Habitat and WHO, 2020, p.10). While the built environment itself is of vital importance in contributing to health outcomes, it would indirectly shape the health behaviours and their associated outcomes. As seen in Figure 2-2, albeit attributes of the physical environment contribute only 10% of the health outcomes, the physical environment correlates to the impact of the health behaviours, resulting in a total of 40% contribution to health outcomes (American Hospital Association, 2018). Particularly, through spatial pattern determination, resources allocation, infrastructure planning and resilience planning in strategic spatial planning and identification of key determinants, promotion of health equity, promotion of healthy living and well-being and prevention of disease can be achieved respectively.

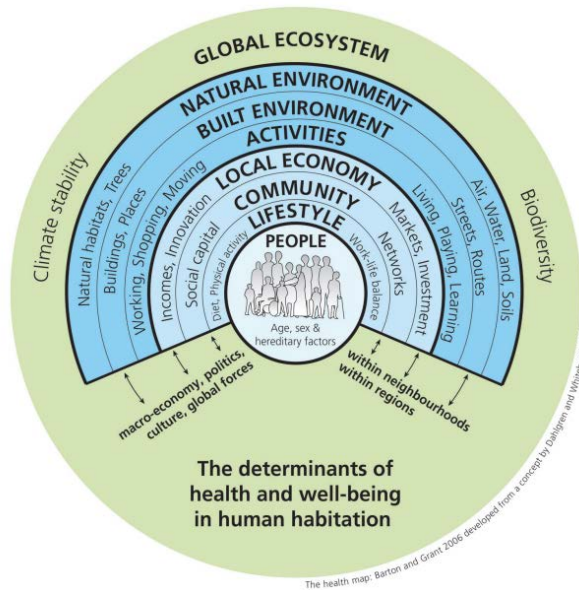


Figure 2-1: Health Map of Determinants of Health
Source: Barton and Grant, 2006

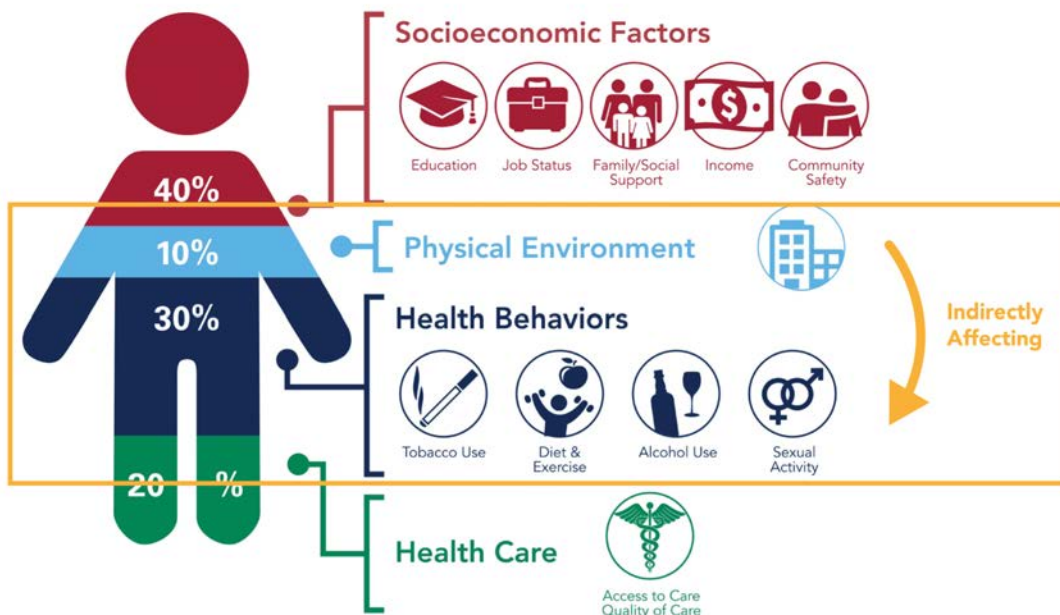


Figure 2-2: Contribution of Different Factors regarding Health Outcomes
Source: American Hospital Association, 2018; illustrations by PlanGen, 2021

2.1.5. Strategic planning for health is also crucial in promoting sustainable development. Healthy city planning could achieve SDG 3 (good health and well-being) and SDG 11 (sustainable cities and communities) by creating more assets for healthier lifestyles in the city. There are further triggering effects of SDG 3 and 11 on other SDGs, holistically reaching sustainable development (See Figure 2-3).

Characteristics of a Healthy City	
1	A clean, safe physical environment of high-quality (including housing quality)
2	An ecosystem that is stable now and sustainable in the long term
3	A strong, mutually supportive and non-exploitative community
4	A high degree of public participation in and control by the public over the decisions affecting their lives, health, and well-being
5	The meeting of basic needs (food, water, shelter, income, safety and work) for all the city's people
6	Access to a wide variety of experiences and resources, with the possibility of multiple contacts, interactions, and communication
7	A diverse, vital and innovative city economy
8	Encouragement of connectedness with the past, with the cultural and biological heritage, and with other groups and individuals
9	A city form that is compatible with and enhances the above parameters and behaviours
10	An optimum level of appropriate public health and sick-care services accessible to all
11	High health status (both high positive health status and low disease status)

Table 2-1: 11 Characteristics of a Healthy City

Source: Duhl and Hancock, 1988

2.2.3. The healthy city approach is not a new idea. The healthy cities movement was initiated by the WHO in 1986, calling for international commitments and efforts in incorporating “Health for All” and health promotion within their political agenda (Tsouros, 1991). “Health for All” is a vision prioritised by the WHO which seeks to take into account the health implications in policy and planning decisions, improve the population health and promote health equity as the essence of Healthy City (WHO, n.d.).

2.2.4. With increasing focus on sustainable development and resilience, healthy cities envision to 1) shift from a need-based to a proactive, asset-based approach which does not only solve health problems but also promotes the engagement in healthy lifestyles, 2) promoting human-centred urban development, and 3) planning with considerations of health equity, sustainability, social inclusiveness and resilience (WHO, 2016; WHO, 2021). Cities shall respond to current challenges, anticipate and mitigate emerging problems, adapt and innovate to cope with future changes in health challenges and inequality (WHO, 2016).

2.3. Smart Solutions for Healthy City Development

Smart Cities

2.3.1. Smart City is widely accepted as a new form of urban strategy capable of tackling 21st-century urban issues. The concept of smart city was developed based on the sustainable development principles in the light of development of ICT to optimise the resources utilisation and improve the efficiency of the cities. Smart Technologies, Smart People and Smart Institutions can be identified as core components of the smart cities (Nam and Pardo, 2011).

Smart City Blueprint 2.0 for Hong Kong

- 2.3.2. Hong Kong's aspiration in creating a smart city is demonstrated in the Smart City Blueprint 2.0 for Hong Kong, which include six smart areas (See Figure 2-4) (Innovation and Technology Bureau Hong Kong, 2020).

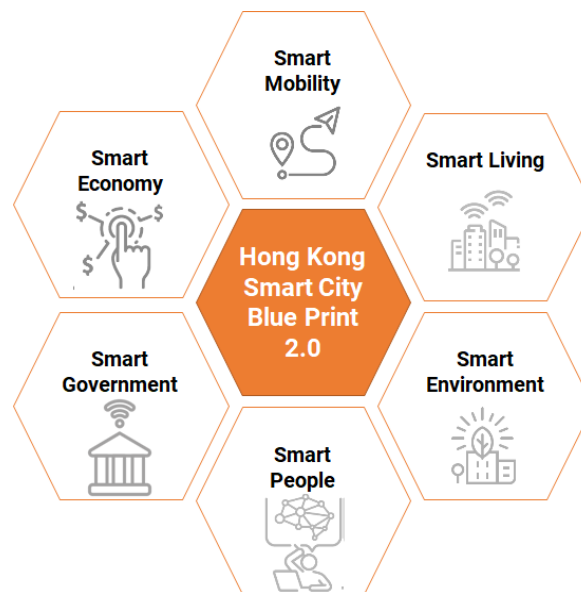


Figure 2-4: Key Smart Areas identified in Hong Kong's Smart City Blueprint 2.0
Source: Innovation and Technology Bureau Hong Kong, 2020; Prepared by PlanGen

- 2.3.3. Promoting the health and well being of its citizens through green, clean, livable, sustainable and resilient smart city development is a key component of the mission of the smart city blueprint of Hong Kong. Various smart strategies have been introduced under each thematic area for this mission (Innovation and Technology Bureau Hong Kong, 2020). The key strategies identified in the Smart City Blueprint 2.0, related to healthy city development is listed under Table 2-2.

Key Strategies Proposed in Smart City Blueprint Related to Healthy City Development
Use of I&T and IoT in combatting Covid 19
HKeMobility all in one mobile app to promote walkability
Real time adaptive traffic signal systems for give priority for pedestrians
Crowd management system development for major event destinations
Develop environment friendly transport modes
Launch the Big Data Analytics Platform under the Hospital Authority’s Data Collection Lab for facilitating healthcare related research, and continue to adopt smart hospital initiatives
Commission the stage two of the Electronic Health Record System
Explore the use of telehealth, video conferencing and remote consultation in Hong Kong
Implement various decarbonisation measures to reduce carbon intensity by between 65% and 70% by 2030 compared with the 2005 level, strive to achieve carbon neutrality before 2050
Use remote sensing devices to monitor air pollution
Implement the Multifunctional Smart Lampposts pilot scheme to facilitate collection of real time city data to enhance city management and other public services

Table 2-2: Key Strategies Proposed in Smart City Blueprint Related to Healthy City Development in Hong Kong’s Smart City Blueprint 2.0

Source: Innovation and Technology Bureau Hong Kong, 2020

Digital Health Strategies

- 2.3.4. Apart from the above, WHO introduced the Global Strategy on Digital Health 2020-2050 plan to promote equitable, affordable and universal access to healthcare facilities (WHO, 2020b). Digital healthcare solutions provide flexibility and comfort to develop more personalised healthcare solutions through evidence-based, improved medical diagnostics and treatment decisions using cutting edge technology related to IoT, virtual care, remote monitoring, AI, big data analytics, block chain, smart wearable which enable data capture, remote monitoring and exchange of informations between various healthcare ecosystems (Solanas et al., 2014; WHO, 2020b).
- 2.3.5. In addition, smart health communities, with an ecosystem of public and private entities, can be characterised with the five elements as depicted in Figure 2-5 (Deloitte Insights, 2019). They are considered as actors in addressing the social, economic, and environmental determinants of

health, improving the healthcare system, and encouraging disease prevention to promote a healthy city.

The five key elements of smart health communities



Figure 2-5: The Five Key Elements of Smart Health Communities

Source: Deloitte Centre for Health Solutions and Deloitte Centre for Government Insights, 2019

- 2.3.6. Hong Kong has already geared towards the establishment of smart cities with digital healthcare solutions, which can be potentially integrated to this healthy city strategy to reap the effects of a circular economy for the benefit of the majority of Hong Kongers.

3. Overview of Healthy City in Hong Kong

3.1. A Glimpse of Hong Kong's Health Situation

Hong Kong as a Healthy City: Global Recognition

- 3.1.1. Hong Kong is recognised as a healthy city in different global rankings. In the LSE wellbeing research conducted in 2011 and the 2018 Bloomberg ranking of the efficient healthcare system, Hong Kong has ranked the top with the high life expectancy of 84.3 years, a very low infant mortality rate of 2 per 1,000 live births, and the relatively low cost of medical services at US\$2,222, surpassing most of the global metropolitans, such as Singapore, London and New York (Burdett et al., 2011; Miller and Lu, 2018). The long life expectancy and low infant mortality rate is attesting to the quality healthcare services in safeguarding the health of the citizens.
- 3.1.2. Hong Kongers are also deemed to be the most physically active city residents. Research conducted by Stanford University showed that Hong Kongers are more physically active than 45 assessed countries with an average daily step of 6,680 steps (Althoff et al., 2017). Living in a dense urban environment, walking has become an indispensable part of our life, developing a more active lifestyle for Hong Kongers. Walking also promotes our health as people with an active lifestyle are at a lower risk of chronic disease and severe health conditions.
- 3.1.3. Leveraging on the sound healthcare system and walkable urban development, Hong Kong has established a high reputation as a healthy city.

Current Performance

- 3.1.4. In spite of the excellent performance in the global index, there are still prominent health concerns in terms of physical health, mental health and health inequality in Hong Kong.

Physical Health

- 3.1.5. Behavioural risks, including physical inactivity and unhealthy lifestyle, are significantly impacting the population health and increasing the risks of having NCDs. In 2016, major NCDs, such as cancers, heart diseases and diabetes, were accounting for 55% of the total registered death and causing about 104,600 potential years of life loss (Food and Health Bureau and Department of Health Hong Kong, 2018), posing significant threats to our health and the development of a healthy city.
- 3.1.6. Physical inactivity is one of the four major behaviours posing threats on health. A survey conducted in 2016 revealed that over 55% of the respondents failed to meet the WHO recommended level of physical activities (CHP, 2016). For adolescents, 93% of primary and secondary students were insufficiently physically active in the 2015/16 school year (Food and

Health Bureau and Department of Health Hong Kong, 2018). While physical activities would generate multiple health benefits, such as risk reduction in chronic illnesses and releasing stress, the situation of physical inactivity in Hong Kong is worrying. The built environment has a particularly prominent role in stimulating more physical exercise with a favourable environment for active mobility and high quality of open space.

Mental Health

- 3.1.7. Apart from the challenges posed by physical health, there are also problems of deterioration of mental wellbeing in the city. The most recent WHO-5 index suggested that the mental well-being of over 60% of the respondents scored below the threshold of 52 (Joyful Mental Health Foundation, 2020). Furthermore, there is also a gradual decline in the index since 2017 and has been below the threshold score since 2018 (See Figure 3.1). An estimation of 1 in 7 of Hong Kongers will be suffering from a common mental disorder (Mind HK, 2021), suggesting the prevalence and severity of poor mental wellbeing. The mental health crisis would definitely be one of the greatest obstacles in building a healthy Hong Kong. While the built environment is contributing to mental health in both direct and indirect way, improving the physical environment is necessary for minimising the mental health sequelae (Evans, 2003).

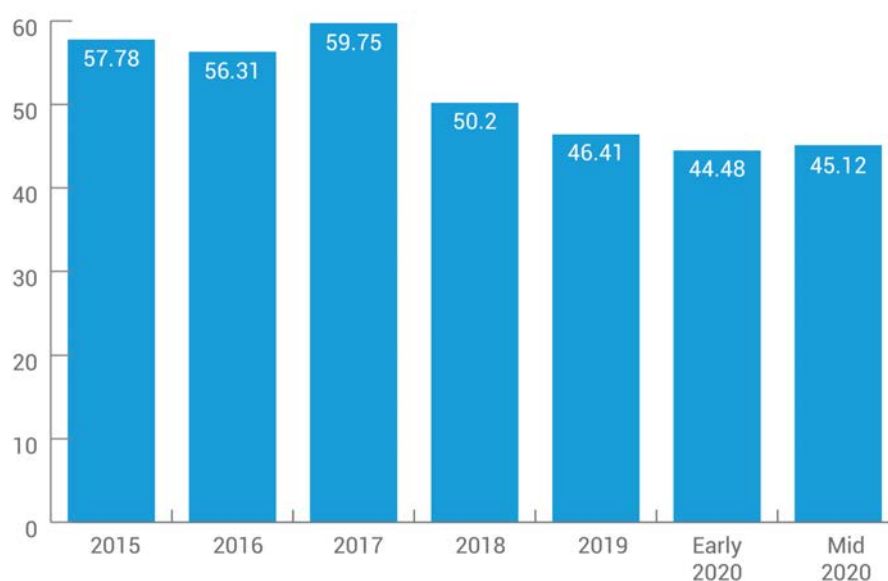


Figure 3-1: Hong Kong's WHO-5 Wellbeing Index (2015-2020)

Source: Joyful Mental Health Foundation, 2020

Health Inequality

- 3.1.8. Healthy inequality, defined as “differences, variations and disparities in the health achievements of individuals and groups” (Kawachi et al., 2002), is also sweeping through Hong Kong, especially under the COVID-19 situation.

- 3.1.9. Health inequality in Hong Kong exists in terms of health conditions and medical resources. Research suggested that higher education levels were associated with a lower rate of overweight, lower body mass index and waist-hip ratio in women (Chung and Wong, 2015). The underprivileged are more likely to be involved in delayed medical treatment and be hospitalised for avoidable issues (Chung and Wong, 2015). A correlation between health condition and socioeconomic status can be drawn with the illustration of health inequality among the lower social class.
- 3.1.10. The outbreak of COVID-19 has intensified the problem of health inequalities among vulnerable groups. Older and under-privileged populations tended to suffer more from mental health problems in times of pandemic (Zhao et al., 2020). They also experienced difficulties in possessing medical resources, such as surgical face masks and disinfecting products in the early outbreak of COVID-19 due to the sky-high price caused by the speculation (Siu, 2020).
- 3.1.11. The problem of health inequality in Hong Kong is positively correlated to social inequality, in which social policy and the early response from the government is crucial in promoting health among all social groups. The distribution of affordable medical resources and a more healthy living environment should be under the consideration of planners to uphold health equality in urban planning.

Is Hong Kong a Healthy City?

- 3.1.12. Hong Kong achieved high rankings in the health index with the long life expectancy, high quality of healthcare services and active walking. Nonetheless, behavioural factors are impacting our physical health and stressors from different aspects are contributing to the severe mental health tsunami in Hong Kong. Health inequality has further exacerbated health problems in vulnerable groups. With the consideration of the undesirable health situation, it is time for planners to take up action on creating a healthier living environment, which could stimulate physical activities, minimise the mental health sequelae and ensure equal access to medical resources and a healthy environment. A conducive built environment for life flourishing would be a starting point to promote the well-being of Hong Kongers in planning for a healthy Hong Kong.

3.2. Existing Planning Directions and Policies for Healthy City

Territorial Level - Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030

- 3.2.1. Under Building Block 1 of Planning for a Liveable High-density City, Healthy City is highlighted as one of the possible strategic planning directions, creating a city environment that is conducive to healthy and active living. The planning direction of a healthy city focuses on two major aspects, the urban climate and the active design.

- 3.2.2. Emphasising the health threats posed by changing climate, the Hong Kong 2030+ has proposed urban climatic improvement measures to strengthen the considerations of thermal comfort, urban climate and air ventilation into the design of the existing urban areas and the future new development areas. Updates on technical assessment and HKPSG on air ventilation are also suggested to improve the environmental quality to create a healthier environment (Planning Department Hong Kong, 2016).
- 3.2.3. The second proposal of the Hong Kong 2030+ focuses on the importance of active design in stimulating more physical activities. A feasibility study is commenced in formulating a set of guidelines on active design for a healthier lifestyle (GovHK, 2020). The Hong Kong 2030+ also suggested increasing the provision and accessibility of recreational facilities and creating a comfortable environment for active mobility.
- 3.2.4. Apart from the two major directions, there are also actions and plans with health consideration under other strategic directions, such as the walkability and cyclability improvement actions under Integrated City, reinventing the public space with redevelopment of substandard public facilities. Many of the health considerations are embedded in plans and action of the Hong Kong 2030+. Yet, there is a lack of integrated approach in regards to the creation of a Healthy City with the fragmented actions under different strategic planning directions. Furthermore, as the study of Hong Kong 2030+ is commenced before the COVID-19 pandemic, there are paradigm shifts in the working and learning arrangements and lifestyle in the post-pandemic era, which are unanticipated in the strategic plan.

Territorial Level - Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong and Partnership for Healthy Cities

- 3.2.5. In 2018, the Department of Health has issued the “Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” (SAP), which has established the framework and targets of NCDs prevention. In achieving the committed local NCDs targets, the SAP also laid out the strategic actions and plans in preventing and controlling NCDs under the eight overarching principles, 1) upstream approach, 2) life-course approach, 3) focus on equity, 4) multisectoral actions, 5) Health System strengthening, 6) Universal Health Coverage, 7) Evidence-based strategies and 8) Empowerment of people and communities.
- 3.2.6. With the foundation laid by the SAP, the HKSAR has joined the global network of Partnership for Healthy Cities initiated by the Bloomberg Philanthropies, the World Health Organisation (WHO) and Vital Strategies in 2019. The global cities network aims to minimise the loss of life through NCDs prevention, and hence create a healthier city (Bloomberg Philanthropies, 2021). The HKSAR has committed to step up effort in enhancing the public health data and monitoring systems through conducting a territorial-wide health survey (HKSAR, 2019). These data would facilitate the future decision-making process of public health policies, resources allocation and healthcare facilities planning.

District Level - Healthy City Movement in District Councils

- 3.2.7. In parallel with the territorial policies, there are also concerted efforts by the district councils in promoting the development of healthy cities. The first Healthy Cities project was initiated in Tseung Kwan O with the support of the Sai Kung District (Department of Health, Hong Kong , 2007). Fifteen districts in Hong Kong are currently holding the membership of the Alliance for Healthy Cities, an international network within the Western Pacific Region committed to the protection and enhancement of the health of city dwellers (Alliance for Healthy Cities, 2007). The district councils have endeavoured to promote and organise activities that are related to “Healthy City” at the local level. They also serve as a representative in overseeing the planning and implementation of health policies by the government. Nonetheless, these efforts remain piecemeal and lack of coordination has deterred the promotion of “Healthy City” in the districts.
- 3.2.8. The COVID-19 pandemic has re-emphasised the importance of Healthy City Planning and necessitated a more integrated and holistic approach in addressing the health problems in our city. Cities shall respond to current challenges, anticipate and mitigate emerging problems, adapt and innovate to cope with future changes in terms of health challenges and inequality (WHO, 2016).

4. Key Issues in Hong Kong

4.1. Land Use

Imbalance of Home-job Distribution

4.1.1. Land use policies play a crucial role in determining the location of residential and commercial areas. While in Hong Kong, the imbalance of home-job distribution is always a key problem leading to negative health outcomes. In Hong Kong, most dwellers need to commute across districts. According to the Development Bureau Hong Kong (2016), 41% of the population is housed in the New Territories, while only 24% of the job opportunities are provided in the New Territories. This spatial imbalance of residence and job opportunities has resulted in a long average commuting time of 47 minutes that has been recorded in the Travel Characteristics Survey done in 2011, increasing from 39 minutes in 2002 (Transport Department Hong Kong, 2014).

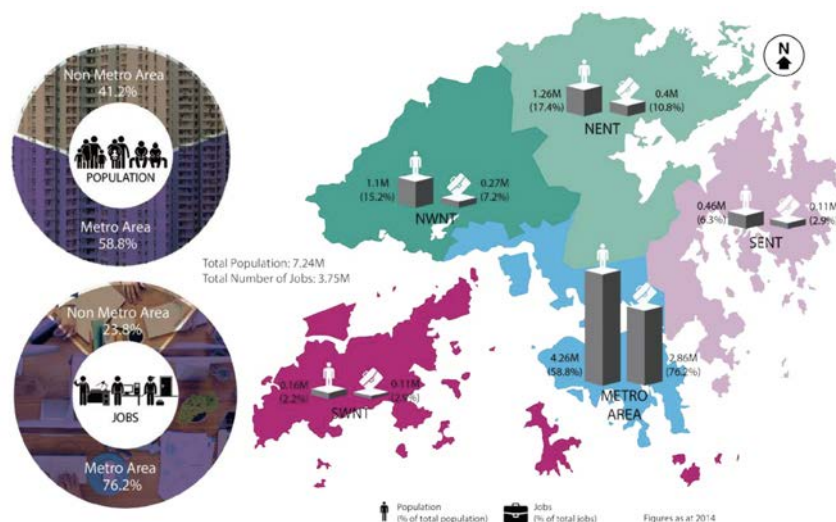


Figure 4-1: Spatial Distribution of Job and Home in Hong Kong

Source: Development Bureau Hong Kong, 2016

4.1.2. The above home-job distribution issue is an important factor regarding a healthy city, as the average commuting time is closely related to the spatial distribution of residential areas and job opportunities. Studies found out that a longer commuting time is negatively correlated with mental health in both direct and indirect ways. Workers with longer commuting time are less satisfied with their jobs and lives in general, and this leads to negative mental health conditions (Clark et al., 2020; Künn-Nelen, 2016; Nomoto, Hara and Kikuchi, 2015). Social well-being would also be affected by long commuting time, as less time could be spent on social activities when longer times are spent on commuting. Therefore, better land use planning can promote health through addressing the mismatch of homes and jobs, as well as reducing transit time.

- 4.1.3. With the completion of the New Development Areas (NDA), it is expected that more population will be moved into the New Territories, aggravating the imbalance of the home-job distribution. To tackle this issue, the Hong Kong 2030+ framework has proposed to incorporate more employment-related land uses outside the metro area by creating new employment nodes in NDAs (e.g. Hung Shui Kiu NDA and New Territories North NDA). It is also suggested that the East Lantau Metropolis could create around 200,000 job opportunities, increasing the proportion of jobs created in the New Territories (Development Bureau Hong Kong, 2016). However, such NDAs also induced a huge amount of population in the New Territories that will also create more commuting trips to the urban areas. Therefore, more actions should be taken in order to further increase the job opportunities in the New territories or reduce the demand for commuting to the urban areas.

Flexibility of Land Use

- 4.1.4. Land use zoning in Hong Kong has been hybridly regulated. Nonetheless, the existing planning system requires a relatively longer time frame for planning approval. As a result, in times of emergency like the pandemic, there is no framework to implement urban strategies for transforming underutilised and existing land use with flexibility and reversibility.
- 4.1.5. The COVID-19 pandemic has called for a review on land use planning policies in regards to work from home arrangement. Home office units that accommodate both residential and office uses without a distinct boundary between the two uses could be established under the land use policies. Such developments on home office units could be permitted in the NDAs or underutilised industrial buildings so as to promote pandemic resilience. In addition, due to the limit of space and the household size, some flats in small sizes or dilapidated conditions might not be suitable for work. Therefore, co-working space in the neighbourhood could be an alternative in providing a suitable environment for work (Hong Kong Institute of Planners, 2020).
- 4.1.6. Moreover, health emergency management could be integrated into land use planning to promote resilience, which has not yet been catered in Hong Kong 2030+. Although mixed land use is encouraged in Hong Kong and people can easily access different services thanks to great connectivity among and within communities, the absence of health emergency management in the land use planning squander such advantages. For example, during the initial period of the pandemic outbreak, the shortage of masks could be prevented or reduced if there is a supply network integrating the emergent goods system (e.g. masks) and public facilities (e.g. post office). Besides, the availability of and accessibility to medical services (e.g. community health facilities and vaccination centres) could be incorporated into land use planning to improve the pandemic preparedness in the future (Kang et al., 2020).

4.2. Housing

Exacerbating Nano-Flats Problems

- 4.2.1. Despite being a highly developed global city, Hong Kong is notorious for the inadequate living space per person, with a median per capita floor area of accommodations of about 161 sq. ft in 2016 (HKSAR Government, 2018a). In Hong Kong, there are 91,787 households living in subdivided units as learnt in 2016, concentrating in the aged districts including Yau Tsim Mong district and Sham Shui Po district. Subdivided units in Hong Kong have a median per capita floor area of 5.3 sq. m, which has been much lower than that of other housing types (Research Office Legislative Council, 2018). Apart from the subdivided units, housing units provided in new residential developments also provided limited living space for residents. Between 2010 and 2019, over 8000 newly-built residential units are with an area of less than 260 sq. ft with no separate bedrooms. In 2019, residential units that are smaller than 260 sq. ft took up 12.9% of the total housing supply, reflecting the exacerbating nano-flats problems (Liber Research Community, 2021).
- 4.2.2. Small housing size is proven to be important determinants of health, which leads to negative health outcomes (Chung et al., 2020). Under the work from home arrangement during COVID-19, Hong Kong people spend more of their time indoors at their homes, making housing a place to sleep, play, exercise and work. Thus, their health is strongly affected by the small housing size in Hong Kong with the situation not significantly improved throughout the years (HKSAR Government, 2018a). With more time spent in tiny units, people could not participate in more active physical exercise and suffer from isolation stress, leading to worsened health conditions (Hong Kong Free Press, 2021).
- 4.2.3. It is mentioned in Hong Kong 2030+ that there is 200 hectare of long-term outstanding land requirement for housing, accommodating for the long-term public and private housing land requirements beyond the Long Term Housing Strategy's 10-year target of 428 000 units of total housing supply from 2021 to 2031 (Development Bureau Hong Kong, 2016; Transport and Housing Bureau Hong Kong, 2021). Besides, the Long Term Housing Strategy has also put emphasis on increasing public housing supply, such as by raising the share of public housing in new housing supply to 70%, allowing an increase of domestic plot ratio for public housing sites in selected Density Zones to a maximum of 30% in total, and redeveloping factory estates through rezoning. However, the Hong Kong 2030+ barely mentions issues of inadequate living space and nano flats. In addition to the housing supply, more emphasis should be placed on the size of flats to improve the crowded living conditions.

Substandard Living Environments

- 4.2.4. Substandard living environments are also an issue in Hong Kong. In terms of the quality of housing environment, residence built with poor-quality and lack of non-destination-driven community facilities is associated with poorer health, reduced physical activity level, more obesity and depressive symptoms (Wong et al., 2016). Perceptions of environmental characteristics such as poor liveliness, pollution and sense of insecurity in the neighbourhood also negatively influence health, in particular contributing to mental health sequelae (De Jesus et al., 2010).
- 4.2.5. For the inadequately housed households, especially those in subdivided units, the poor living environment hindered the health of the residents. The situation has amplified during COVID-19 as it is impossible for them to carry out social distancing practices within the crowded living environment. In aged buildings where subdivided units are often located, ventilation and drainage systems are defective, making those subdivided units particularly high risk in terms of virus transmission (Hong Kong Free Press, 2020). As noted in the COVID-19 cases in public housing estates, lack of ventilation in residential buildings are conducive to higher risks of spreading respiratory diseases (Qu et al., 2020). Residential buildings are also found to have faulty sewage vent pipes, resulting in a rapid increase in COVID-19 cases in several public housing estates, such as Luk Chuen House in Lek Yuen Estate. The situation sounded the alarm against the deficient sewage systems (To and Yuen, 2020).
- 4.2.6. Tackling the problems of ageing buildings, the Hong Kong 2030+ proposes to rejuvenate the urban fabric by boosting building management and maintenance initiatives and facilitating the “Five Rs” as suggested by the Urban Renewal Authority, which are redevelopment, rehabilitation, revitalisation, preservation and retrofitting. Catering for the housing needs of all ages, Hong Kong 2030+ also suggests promoting more inclusive designs in public and private housing units by incorporating the requirements in building design guidelines to facilitate ageing in place (Development Bureau Hong Kong, 2016). It also strives to support households with poor living standards by promoting the development of transitional housing and studying tenancy control of subdivided units (Transport and Housing Bureau Hong Kong, 2021). Little effort has been placed on improving the living environments in Hong Kong.
- 4.2.7. Overall, the existing poor housing conditions regarding the overall small housing size, lack of spaces to relieve stress in housing, measures to enhance the safety and liveness of the neighbourhood are rarely catered in government’s strategic planning. Emphasis has been put mostly on increasing housing supply, with little considerations on the quality of the housing and the neighbourhood design with resilience.

4.3. Transport

- 4.3.1. Hindrance to active mobility is the most prominent transport issue that highly determines the success or failure of a healthy city planning. Promoting walking and cycling encourages people to exercise more and in turn enhance their physical health. Studies also show that physical activities improve mental well-being and trigger opportunities for enhancing social connectedness (Clough et al., 2016). The prevalence of infrastructure for active mobility can also lower the private vehicle usage and improve the access to public transport nodes, alleviating roadside air pollution and the threats induced by resultant health threats including respiratory diseases and cancer.
- 4.3.2. COVID-19 hits and reshapes our travel patterns over the globe. Under the work-from-home policy, the number of commuting trips has been reduced, so people tend to stay home which would intensify the sedentary lifestyle and jeopardise our health, further reducing physical activity. It is anticipated that cycling and walking can reduce unnecessary social contact for social distancing purposes during trips on public transport and in turn develop a healthy lifestyle (Chartered Institute of Logistics and Transport Hong Kong, 2020). It is suggested by scholars that urban planning should consider road spaces for cycling paths or pedestrian-prioritised streets, promoting active mobility even after the pandemic (Megahed and Ghoneim, 2020).

Unfavourable Pedestrian Environment

- 4.3.3. Fundamentally, there are unfavourable environmental circumstances for active mobility in the urban environment in Hong Kong. Owing to the costly parking facilities and increasing number of private vehicles, there are prevailing roadside parking which worsen the road conditions for active mobility in Hong Kong. Given the fast-growing number of private vehicles, the total number of parking spaces merely grew from 678,000 in 2006 to 743,000 in 2016, resulting in the ratio of number of licensed vehicles to the number of parking spaces dropping significantly to 1.05 in 2016, which mean parking facilities are incapable of accommodating the increasing number of vehicles (Research Office, Legislative Council Secretariat, 2018).

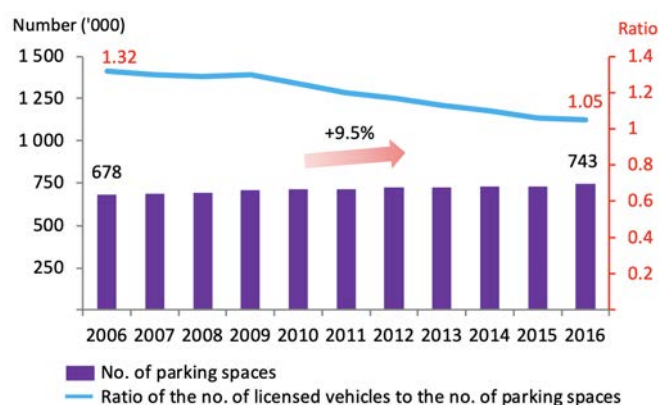


Figure 4-2: Ratio of Licensed Vehicles to Parking Spaces 2006-2016
Source: Research Office, Legislative Council Secretariat, 2018

- 4.3.4. Undesirable conditions for walking are also illustrated in the inner city, where street facilities are primarily designed to prioritise vehicular traffic. There is an imbalanced attention to the needs, comfortability, safety and enjoyment of pedestrians. For instance, the industrial area in Kwun Tong, locating south of Kwun Tong Road, performs poorly in walkability, scoring only 11 out of 42 with most of the street facilities prioritising the movement of heavy-duty trucks and loading/unloading activities, which obstruct pedestrian movement (Civic Exchange, 2016). The lack of emphasis on pedestrian priority and the poorly managed street environment in turn discourages healthy lifestyle.
- 4.3.5. Some effort in promoting healthy transportation has been reflected in the study paper “Transport Infrastructure and Traffic Review” under the Hong Kong 2030+. Active transport railway development is emphasised to facilitate the strategic development of Hong Kong. Importance of pedestrian safety and connectivity is stressed, with the promotion of the concept of “walkable city”. Improvement in the pedestrian-oriented environment, such as provision of sheltered and air-conditioned walkways, direct and continuous walkways, provision of crossing facilities and easy wayfinding facilities are suggested. There are also several pedestrianisation schemes in various vibrant business districts as well as other traffic calming measures. Nevertheless, active mobility remains not prioritised in overall healthy city planning and the existing strategic plan.



Figure 4-3: Loading Activities and Congested Road Environment in Kwun Tong
Source: Development Bureau Hong Kong, 2014

Recreational-oriented Cycling Policies

- 4.3.6. Not only walking, but cycling is also not encouraged as a daily commuting mobility mode in Hong Kong, due to the extensive road network coupled with the large capacity of the public transport system. With insufficient supporting mid and end-of-trip facilities and a relatively fragmented cycling network, cyclists face intense safety issues when competing with vehicles on road space (Gallagher et al., 2009). For instance, there are junctions along the cycling paths where cyclists have to dismount and walk through the junctions along the new path from Yuen

Long to Sheung Shui. There is also observable insufficiency of cycling parking in the New Territories (Lee, 2013). While the Planning Department has stipulated the ratio between flats and bike parking space i.e. 1 bike parking space for every 15 flats within a 2km radius of a railway station, and 1 space for every 30 flats outside a 2km radius of a station, the standard may still be inadequate to cater for demand from households as observed by the frequent roadside bicycle parking (Planning Department Hong Kong, 2020).

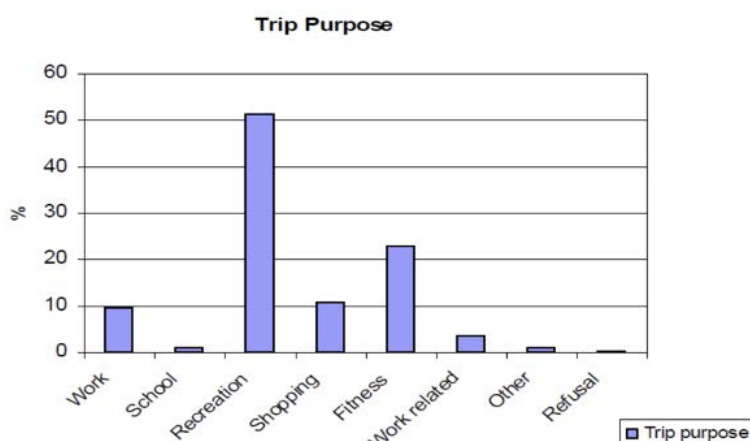


Figure 4-4: Trip Purposes of Cycling

Source: Transport Department Hong Kong, 2004

- 4.3.7. Existing cycling policies in Hong Kong focus on recreational purposes in the New Territories, where roads are less congested, promoting cycling as a supplementary transport mode that facilitates short-distance traveling, whereas cycling is less popular in Hong Kong Island and Kowloon with no bikeways and immense motorised traffic (Lee, 2013; Transport Department Hong Kong, 2004).
- 4.3.8. Hong Kong 2030+ asserts the government's dedication in incorporating cycling facilities in the planning of new towns and NDAs. Most of the NDAs are designed with cycling paths to encourage intra-new town travel and cycling from the public transit to residential areas. Furthermore, it also highlights the improvement work conducted by the Transport department in promoting a more bicycle-friendly environment in addition to the existing network. A total of 82 km of cycling path is constructed/ under construction in completing the cycling network in the New Territories. The government would also endeavour to provide more bicycle parking spaces in public transport interchange to encourage cycling as the last mile transit (Development Bureau Hong Kong, 2016).

Limited Functions of Streets

- 4.3.9. Apart from issues with environmental circumstances and supporting infrastructure, streets in Hong Kong put emphasis on maximisation of the “link” function, while neglecting the “place” function of streets. Facilities and arrangements are delivered to primarily support the function of the street as a transport medium. Indeed, streets can be reimagined as destinations where people perform recreational and socialising activities. Struggles between the functions of link

and place can be observed, especially in narrow streets with high pedestrian flow that discourage pedestrians to stay (Civic Exchange, 2016). Planning of streets has failed to fully actualise the function of streets as a place, undermining the potential of walkable streets to embrace a wide spectrum of elements, including easy wayfinding, safe walking environment and public space for all.

4.3.10. To sum up, active mobility remains less-prioritised in the existing strategic plan. The focus of measures enhancing walkability is mainly connectivity, with relatively little regards on prioritising pedestrians and improvement to streetscape. In spite of the government’s effort in promoting cycling, cycling remains positioned as a leisure activity, due to the discontinued network coverage for cross-district purposes and insufficient supporting facilities other than the mild increase in parking spots as mentioned above. The position of streets remains narrow as a connector between destinations. It is time to reimagine the multi-functionality of streets to build a healthier city that promotes active mobility and vibrant social life.

4.4. Open Space

Insufficient Community Open Space for Active Exercise

4.4.1. Under the pandemic, demand of residents on visiting public open spaces drastically increased. Evidence shows that there are insufficient quantities for community open space for active exercise. The average size of green spaces of Hong Kong is lagging far behind other Asian world cities (See Table 4-1). Insufficient open space was also found in many districts (See Table 4-2). There is a need to expand the network of community open space for more active exercise. Furthermore, the social distancing considerations and the changing needs of different groups of people are not under the current planning consideration of open space (Honey-Rosés et al., 2020). A review is necessary to respond to the greater demand of green and open spaces in the post pandemic era.

	Hong Kong	Singapore	Seoul
Total Number	287	115	69
Average Size (km ²)	0.02	0.20	0.57
Quantity of urban parks	261 (91%)	115	66(96%)
Quantity of nature parks	26 (9%)	18(16%)	3 (4%)

Table 4-1: Comparison of Green and Open Spaces between Hong Kong and Other Asian World Cities

Source: Lu et al., 2020

Ranking	Zoning Area	Calculable Open Space per Capita (m ²)	Neighbourhood Open Space per Capita (m ²)	District Open Space per Capita (m ²)
1	Mong Kok	0.6	0.6	0.1
2	Wan Chai	0.7	0.5	0.2
3	Mid-Level West	0.9	0.5	0.4
4	Causeway Bay	1.0	0.6	0.4
5	Kennedy Town & Mount Davis	1.0	0.8	0.2
6	Sai Ying Pun & Sheung Wan	1.1	0.6	0.
7	Hung Hom	1.3	0.8	0.4
8	Cheung Sha Wan	1.4	0.9	0.5
9	Yau Ma Tei	1.5	0.7	0.8
10	Mid-Level West	1.6	1.6	0.0

Table 4-2: Top Ten Zoning Area with Underprovision of Public Space

Source: Civic Exchange, 2017

- 4.4.2. Furthermore, many of the urban public spaces, especially those urban parks are individually scattered in small patches within the inner city, with low walkability. Research by Civic Exchange (Chow, 2018) revealed that official public open spaces are less accessible than informal public spaces, unable to attract more visitors to conduct exercise in better-planned playgrounds. Scholar also highlighted that there are 15% of the total number of residential blocks, including both middle-class household as well as neighbourhoods of underprivileged families in old urban tenement buildings, cannot reach a neighbourhood open space within 5 minutes of walking (Tang et al., 2020). Improvements in walkability for public open space are necessary to promote active lifestyle within the community.
- 4.4.3. Apart from the conventional open spaces, community gardens are also perfect spots to stimulate active lifestyle through urban farming. “Community Garden” has been promoted by the Leisure and Cultural Services Department since 2004. The programme has received overwhelming demand from the public with a high number of applications (HK01, 2016). With limited vacancies and increasing number of applications, each applicant is entitled only 4-month ownership of the gardens. There are insufficient quantities of community gardens in responding to the demand of citizens. With the changing awareness of healthy lifestyle, there would be higher demand for community gardens as a means to engage in active lifestyle.

4.4.4. Indeed, the government has spotted the gaps in terms of the quantity of open spaces. The Hong Kong 2030+ strategic report has put one of its emphasis on enriching green open spaces. The government is set to explore the scope for increasing open space per capita standard under the Hong Kong Planning Standards and Guidelines. More than that, other emphasis is put on the importance of leveraging green and blue assets to promote a healthy city in Hong Kong. Government sets out to formulate a “Green and Blue System” network in the forms of diversified green and blue assets, increasing the quantity and accessibility of open space. There are also considerations on creating green and blue infrastructure in the new development areas. Furthermore, emphasis is also put on cultivating community green networks. There are recommendations on the initiative of community farming not only to increase greenery in communities, but also to promote social cohesiveness. Apart from community farming, the government has also shed light on urban farming, and planning guidelines are needed to be reviewed for more provisions.

Improvement needed for Open Space Design

4.4.5. According to the survey conducted by the Civic Exchange (2018), less than 50% of Hong Kong residents have a regular habit of visiting any kind of public open space once in a month. The survey revealed that the residents are unsatisfied with the public open space, resulting in a low usage rate. Among the 7 factors, the aspect of “available facilities” scored lowest with a satisfaction score of 5.7 out of 10 (Civic Exchange, 2018). The general public is generally unsatisfied with the existing facilities provided in parks, thus lowering their incentive to visit these open spaces.

4.4.6. It is seen that there are rooms for improvements in terms of the variety of park facilities. Centrally provided and maintained by the Leisure and Cultural Services Department, similar park facilities are found across the leisure grounds in Hong Kong (Leisure and Cultural Services Department Hong Kong, 2020b). The “one-size-fits-all” park design could not cater to the needs of the end users, resulting in relatively low usage and more active exercise are yet to be fully stimulated. Public engagement in park design is also limited as opinions are mostly reflected through comments from the District Council.

4.4.7. While the Hong Kong 2030+ has stressed on the quantity of open space and active design, little is stressed on improving the quality and design of park facilities, which indirectly promote the usage of formal public space. The Consultancy concludes that more could be done in improving the quality of open spaces through engaging the community, reflecting the demand of end-users in open space design.

4.4.8. Green and public open spaces play a significant role in driving for a healthy lifestyle for citizens, especially in the urban area where compact development dominates. The extent of greenness, diversity of amenities catering active and passive activities and the comfortability of the open

4.5.3. According to the proximity analysis carried out by the Consultancy, it was observed that there are some residential areas that fall outside the coverage areas of existing healthcare facilities (See Figure 4-6). This indicates the issues related to equity of access to the health care facilities within the current distribution facilities in Hong Kong. This equity issue is worse in the New Territories compared to the old districts in Hong Kong.

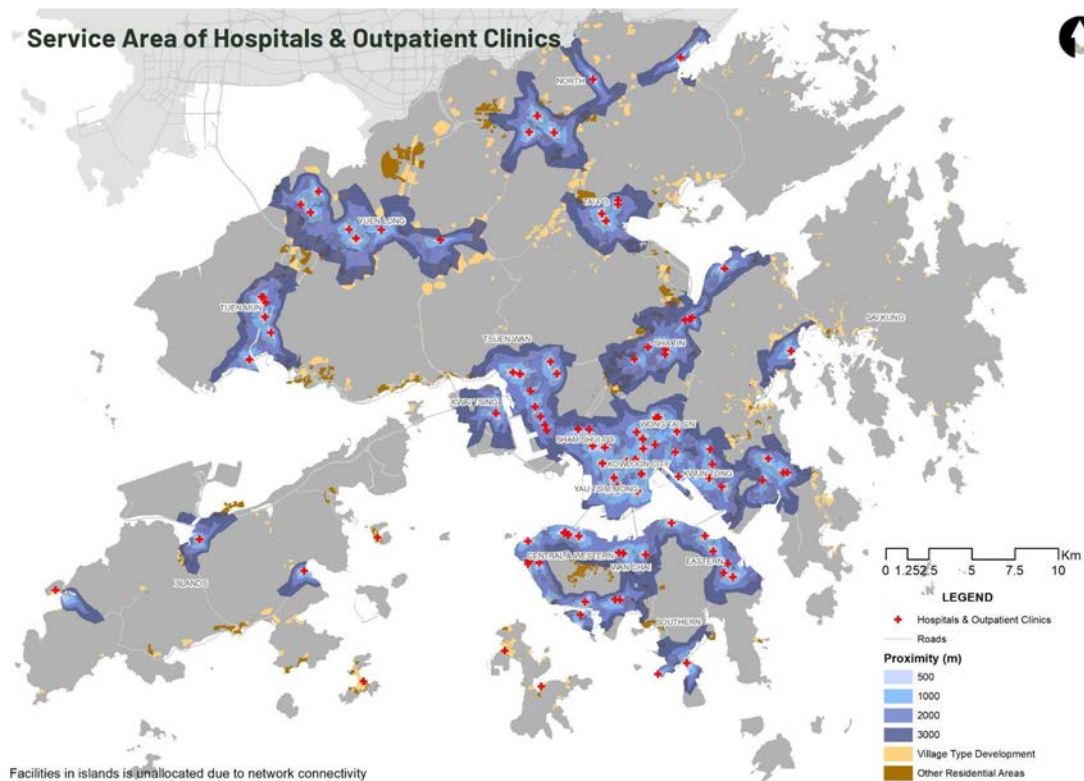


Figure 4-6: Proximity to Hospitals, Clinics & Health Care Centres
 Data Source: Hospital Authority, 2021; Prepared by: PlanGen, 2021

4.5.4. The findings also echo with other research done by scholars, the need to improve the equity of healthcare resources is highlighted, reduce the underserved areas and optimise service delivery, since the current planning guidelines do not provide an indication of the proximity and locational criteria of healthcare facilities. According to Zhang et al. (2016), they have proposed the following objectives for location allocation of healthcare facilities for Hong Kong. Further, they have analysed that the existing healthcare facilities do not meet the optimisation criteria defined below (See Figure 4-7):

- minimise inequity of accessibility,
- maximise accessibility for the whole population,
- minimise the number of people who fall outside an acceptable travel distance to at least one facility,
- and minimise the cost of building new public health-care facilities.

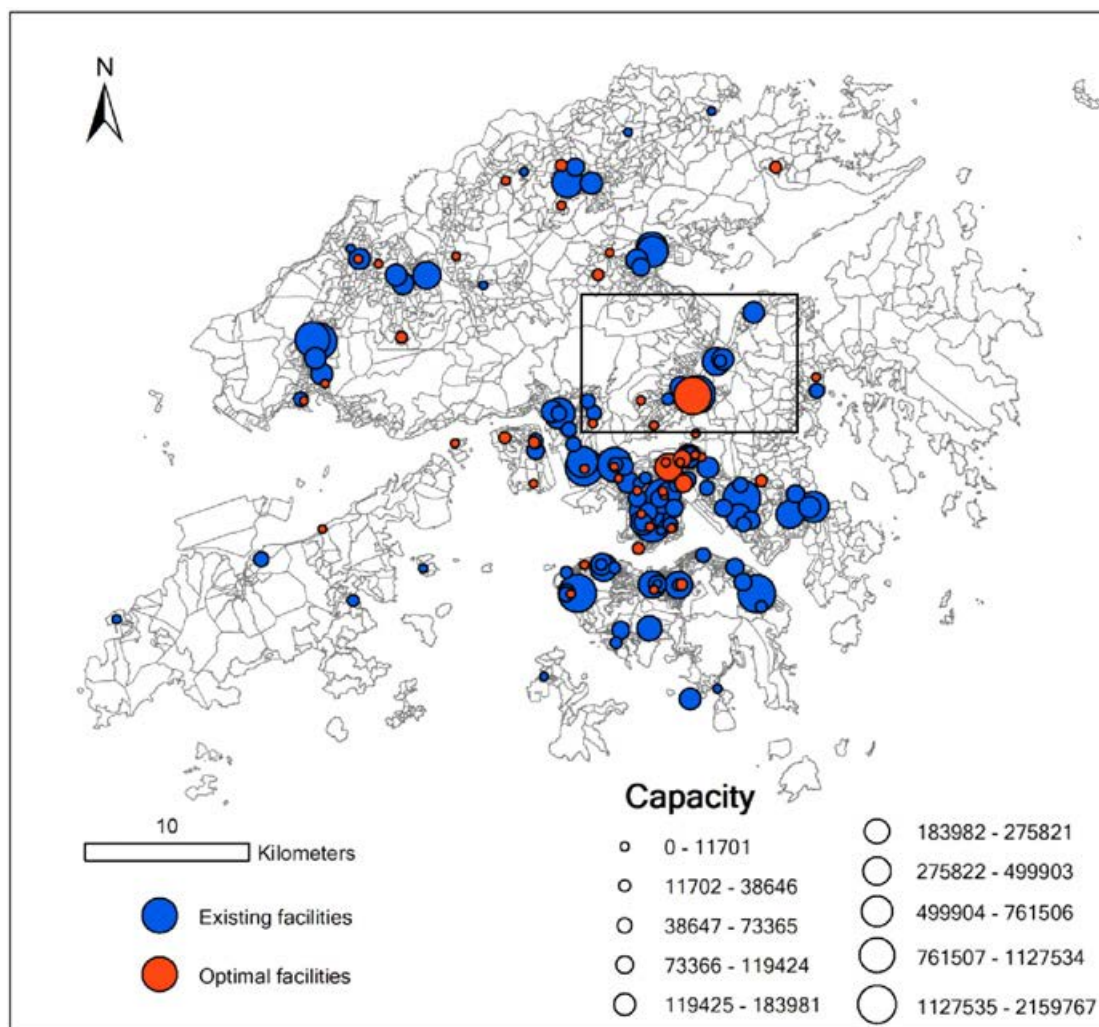


Figure 4-7: Existing Facilities and Optimal Facilities identified by Zhang et al.

Source: Zhang et al., 2016

- 4.5.5. The statistics also show that there is a shortage of hospital bed provision. The HKPSG stipulates that 5.5 hospital beds are necessary per 1,000 population. Yet, there are only 4.2 beds per population (Hospital Authority, 2020). The number of hospital beds have not increased compared to population growth during the past two decades. Since 1997 to 2018. The total population growth during that period was 11%, however the total number of hospital beds has only increased from 2.9% (HKSAR Government, 2018b).

Hospital Bed Capacity	5.5 per 1000 population
Area Requirement	80 Sq.m per bed 60 sq.m per bed for extended care services
Specialist Clinics & Poly Clinics	Site reservation of 4712 Sq.m
General Clinics & Health Centers	1 per 100,000 population Site reservation 2220 Sq.m per facility
Location Factors	<p>Good accessibility and reasonable central location</p> <p>Hospital should preferably be sited in elevated positions to take the advantage of scenic view and environmental conditions</p> <p>Located away from major roads, and industrial areas or insulated from noise and fumes of such uses.</p> <p>Specialist clinics should be located adjacent to public hospitals</p> <p>General clinics to be located at easily accessible locations by public transport</p>

Table 4-3: Summary of HKPSG on Healthcare Facilities
Source: Planning Department Hong Kong, 2020

- 4.5.6. As a forward-looking action, a 10-year hospital development plan is proposed by the Hospital Authority in expanding the network of healthcare services with the redevelopment and expansion of the existing facilities and construction of new community healthcare facilities. It is expected to provide additional 5000 hospital beds, 90 additional operating theatres, and capacity improvement of general outpatient clinics and specialist outpatient clinics by the end of 2026 (Hospital Authority, 2016).
- 4.5.7. In this respect, there are both challenges in terms of accessibility and the provision of the hospital bed. The problem is not merely about the spatial distribution of healthcare facilities that have already been gradually catered to in the upcoming 10-year hospital plan, but also the shortage of medical professionals in Hong Kong. A multi-sectoral effort is necessary to improve the existing situation of healthcare facilities with the priority placed on the human resources problem. With the consideration of the lessons learned from the current pandemic situation, it is required to revisit the priority setting for healthcare resources to create a more resilient healthcare system in Hong Kong.

Further Emphasis on Preventive Healthcare

4.5.8. In the view of promoting preventive healthcare facilities, the establishment of District Healthcare Centre was promoted in 2017 and under this programme the first DHC in Hong Kong was opened to the public in September 2019 as a public-private partnership. The main roles identified for DHC are to provide primary healthcare services, health promotion, health assessment and chronic disease management. As an extension of this strategy, it is proposed to develop one DHC for each district in Hong Kong. Owing to the operational need of large floor space, it is difficult to search for governmental land for DHC within a short period of time. Currently, sites have been identified for DHC in 8 districts (See Figure 4-8) and there are ongoing studies for DHCs in the remaining ten districts (Legislative Council Secretariat, 2020). Time is needed for further evaluation of the effectiveness of the service coverage of DHCs.

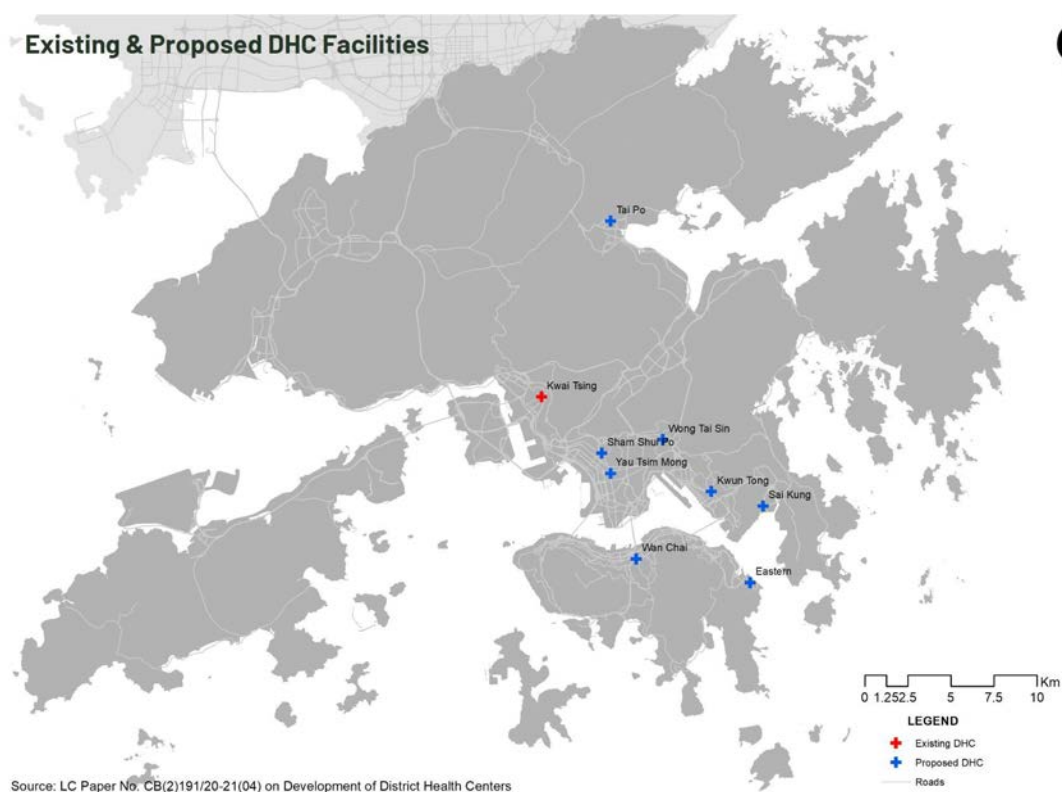


Figure 4-8: Distribution of Existing & Proposed District Health Centre
Data Source: Legislative Council Secretariat, 2020; Prepared by: PlanGen, 2021

4.5.9. Apart from DHC, digital solutions could also promote the concept of preventive healthcare. Hong Kong is one of the first adopters of digital healthcare solutions in the region (Hospital Authority, 2019). As a part of this strategy an electronic health record system (e-Health) had been introduced in early 2000. The e-Health system could facilitate the early monitoring of disease, minimising the need for curative healthcare with early intervention. Apart from this various trials have been made for use in video conferencing for health care service provision, reducing the trip demand to medical facilities. The current pandemic situation has ameliorated the usage of digital health solutions, promoting the technology to a wider group of people in

Hong Kong. Yet, effectiveness of these measures remain limited with the little popularity among the community due to various privacy related concerns. Nonetheless, more can be done in promoting preventive health care conception. Integration of the physical facilities and the virtual database could further strengthen the concept of preventive healthcare in the city.

5. Vision for Planning a Healthy Hong Kong

- 5.1.1. Since 1998, the WHO has committed through the World Health Declaration that the enjoyment of the highest attainable standard of health is one of the fundamental human rights of every people (WHO, 1999). Over the years, the renowned international organisation has been putting efforts in designing, implementing, monitoring and evaluating an asset-based, innovative, cost-effective and quality-oriented strategy to advocate healthy lifestyle and healthy environment (WHO, 2021). This implies the vital importance of taking public health considerations into the account of planning policies and strategies, so as to maximize healthy outcomes by shaping the built environment.
- 5.1.2. In light of the changing context of the pandemic which challenge the planning of a healthy city for Hong Kong, the overarching review of the Hong Kong 2030+, evaluation of Hong Kong’s current planning practices regarding healthy city, issues identified and the analysis of international examples consolidate PlanGen’s vision statement, which is established accordingly as: **“Create a Healthy City through Improving the Health for All”**, followed by the three goals as supplements to contextualise the vision.

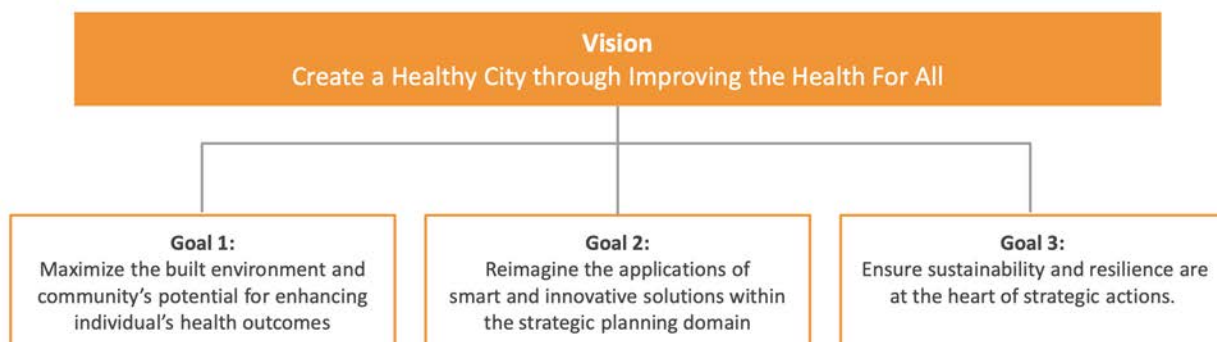


Figure 5-1: Strategic Planning Proposal: Vision and Goals
Source: PlanGen, 2021

6. International Case Studies

6.1. Overview

- 6.1.1. The international case study aims to take reference to some of the best practices on healthy city development, analysing the strategic planning directions and draws key lessons in respect to the issues in Hong Kong. Case selection are conducted based on the criteria of the 1) comparability of with the similar contexts, 2) existence of policies and best practices which have a demonstrable and tangible impact on improving people's quality of life, and 3) availability of socially, culturally, economically and environmentally sustainable policies and best practices (Débora Salafranca Vázquez, 2014). Table 6-1 depicts the evaluation of the criteria in accordance with the three selected cities, London, Paris, and Singapore. The case study also lays the foundation for exploring possible planning recommendations related to healthy city development, providing inspiration for the possible strategic planning directions, subject to further feasibility and adaptability considerations.

	Hong Kong	London	Paris	Singapore
Population Density	7140/km ²	5701/km ²	20,300/km ²	8358/km ²
Total Population	7.5 Mn	8.9 Mn	2.2 Mn	5.7 Mn
Availability of Strategic Plan which address healthy city status	☑	☑	☑	☑
Existence of best practices related to healthy city status	☑	☑	☑	☑

Table 6-1: Comparability of International Case Studies

Source: Various sources; Prepared by: PlanGen, 2021

6.2. London

Background & Study Focus

- 6.2.1. Initiated by the Mayor of London and the Greater London Authority (GLA), the London Plan serves to set out the integrated framework of development in London over the coming 20-25 years. Since 2016, London Plan has acknowledged the importance of health promotion as one of the strategic planning objectives and has further stipulated a clear Good Growth objective of creating a healthy city (GG3) in the latest strategic plan London Plan 2021. Covering extensive urban issues, Good Growth (GG) objectives are developed to prioritise the key strategic aspects

for planning. Aiming to improve Londoners' health and reduce health inequalities, several key actions are identified under GG3, including promotion of more active and healthy lives, planning for health and care infrastructure and creating a healthy food environment.

- 6.2.2. Policies and action plans are developed by other government bodies in response to the GG3 set out in the London Plan 2021. There are also partnerships with services providers and borough councils to achieve a more integrated approach for the creation of healthy cities across London.

Embedding Health Consideration in Planning and Design

- 6.2.3. To solve the problem of a healthy living environment, GLA has looked into measures in both macro-scale of planning and assessment and in the micro-level of building design.
- 6.2.4. In sustaining healthy urban development, a health impact assessment (HIA) has been adopted in London since 2002 to assess the potential impacts of a development proposal on the health and wellbeing of the communities. The United Kingdom National Health Service (NHS) London Healthy Urban Development Unit (HUDU) has established a set of assessment matrices to measure the health impact of development and recommend possible solutions in mitigating the impact and maximising the health benefits (NHS London Healthy Urban Development Unit, 2019). The adoption of HIA in London ensures that the health issues would be embedded in the agenda of urban planning and upholding health and health equality as a major principle. Scholars saw the implementation of HIA as a success with the increasing development of transport infrastructure facilitating active mobility, promoting social inclusion and driving the revision of rules and regulation with more health considerations (Bowen, 2007; Mindell et al., 2004). There was also increasing synergy between the strategic plan and the borough plan with increasing understanding of the health (Mindell et al., 2010).
- 6.2.5. The latest London Plan also emphasises the housing design, which is directly linked to the resident's comfortability and health. Minimum space standards for private internal space and private outside space, minimum ceiling height are established to assure that the housing delivered is functional, comfortable and meets the needs of the households. Housing design guidelines on the qualitative design aspects are developed in the London Plan 2021 to support the delivery of high-quality and well-designed housing with adequate sunlight and passive ventilation. The London Housing Strategy also addresses the inclusive neighbourhood design in promoting social interaction, which is beneficial for the wellbeing of the community.

Health Street to Stimulate Active Mobility

- 6.2.6. Walking, cycling and public transport lies at the core of London's transport strategies, with a target of 80% of trips to be made by foot, cycling or public transit.
- 6.2.7. London Plan 2021 has established a Healthy Streets Approach to encourage more active transit, reduce car dependency and improve health. Ten indicators, which reflect the street experience

of road users, are identified to design Healthy Streets in London (Transport for London, 2017). Measures to improve Londoner's street experience, including greening, adequate width for walking and cycling, and improving air quality are advocated to create a high-quality, comfortable and appealing street environment for all kinds of activities, both active transport and leisure activities. Healthy streets become the public realm, where people could come together and interact.

- 6.2.8. Complementing the Healthy Streets Approach, walking and cycling action plans are initiated to identify measures for the promotion of active mobility. Barriers are removed to ensure a pleasant and safe environment for active mobility. Standard and guidelines are laid out to ensure a high-quality walking and cycling environment with sufficient ancillary facilities (Transport for London, 2018a; Transport for London, 2018b). Furthermore, smart technologies are launching to facilitate the wayfinding of road users with the aid of big data analysis (Transport for London, 2018a). The GLA has made continued efforts to improve every aspect of the environment for active mobility, providing a secure and easy to access pedestrian environment in the Capital.
- 6.2.9. All-in-all, Healthy Streets Approach has outlined the different aspects of creating a favourable environment for active transport. Designing a high-quality street environment would not only stimulate active transport but also encourage more social interaction, improving both the physical and mental health of Londoners.

Urban Agriculture to Strengthen Healthy Food System

- 6.2.10. Urban agriculture is considered to be a vital part of a healthy city in providing access to health and creating a healthy food system. The GLA considered a healthy food system as an indispensable component of their healthy city objectives, with several policy directions for fresh food production.
- 6.2.11. Local food-growing initiatives are promoted in the community to strengthen the sense of belonging and encourage healthy eating for vulnerable groups (LEVIDOW, 2018). Small scale farming, such as green roofs and walls, are utilised to deliver fresh food with innovation. Community schemes, such as the Food Growing Schools Scheme, are also promoted to involve students in growing their own food (Greater London Authority, 2021). Food growing projects are encouraged at the green belt, parks, recreational grounds to embed food growing functions to the local landscape. Partnership with external parties is essential to support people with resources and skills to participate in food growing. Non-governmental organisation Capital Growth Network is actively promoting community agriculture and serves as an information platform for urban agriculture across the capital (Greater London Authority, 2021). While the government identifies land resources and opportunities for food growing, the external parties could motivate people to involve in a healthier lifestyle with more exercise through food growing and access to fresh food.

Planning to Complement Healthcare System

- 6.2.12. Four tiers of healthcare infrastructure are provided in London, including primary care, community healthcare, acute provision and specialist provision. Working with the NHS, there is a long-term strategy in coordinating the healthcare infrastructure in the Capital.
- 6.2.13. A new model of healthcare in London emphasised the importance of preventive healthcare and prioritised community healthcare to bring these services closer to the demand (NHS England, 2019). The London Plan provides guidelines for health and social care infrastructure, the implementation details would be formulated by the borough councils in the development plan. Integration and co-location of healthcare services in community centres or in other social development are encouraged to promote integrated service delivery and more efficient use of land resources. The quality, accessibility and capability of the existing services in the locality should also be assessed to efficiently allocate the medical resources (Greater London Authority, 2021).
- 6.2.14. To shift the demand from hospital services to the community, an extended team of medical professionals would be available in the neighbourhood to provide prompt support in proximity to the peoples' home. Digital consultation would be implemented to ensure more efficient delivery of services and reduce the trip demand to the hospitals and clinics (NHS England, 2019). Auditing of the existing and planned infrastructure is necessary to facilitate the transition to the future healthcare system and allocate the services to different areas more efficiently.
- 6.2.15. Spatial planning should be complemented with the design and operation of the healthcare system. While London has adopted technology to advance healthcare services, the spatial distribution of facilities should ensure the delivery of services to be efficient in an integrated manner and to be closer to the community.

6.3. Paris

Background & Study Focus

- 6.3.1. The urban planning and urban design practices in Paris are widely discussed in the field due to its various state-led radical approaches, i.e. the transformation of Paris by Hussmann (1853-1870) (Moreno, 2020; Paccoud, 2016; Pisano, 2020). Most of these state-led initiatives have been deployed to improve the physical environment of the city to overcome issues related to public health and hygiene. The strong political support was a key success factor in most of these state-led development initiatives.
- 6.3.2. The most recent approach is the political manifesto of the Mayor Anne Hidalgo. The manifesto advocates the "chrono urbanism" principle of "15-Minute City". This "15-Minute City" concept

serves as a prototype for the post-COVID imagination and provides implications to the formulation of strategy taking into account the new normal.

- 6.3.3. “Chrono Urbanism” is a process of urbanism which gives priority to space and time integration. Time taken to reach various urban services/facilities are considered a resource under this concept and optimisation of city functions to be achieved through optimisation of time to reach various urban services. This is the basis for a proximity-based planning approach.
- 6.3.4. The proximity-based planning approach highlights the relationship between the city service and users using proximity, time and space. This was further developed and modified after gaining high popularity as a post-COVID city development strategy with the integration of four dimensions, i.e Density, Proximity, Diversity and Digitalisation (See Figure 6-1) (Moreno, Allam, Chabaud, Gall and Pratlong, 2021).

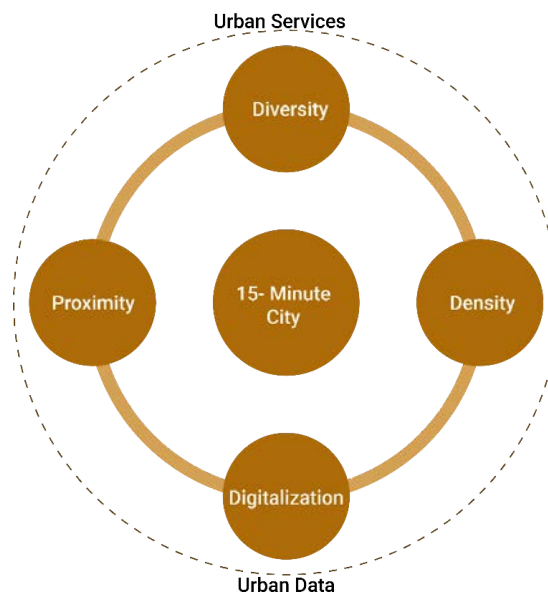


Figure 6-1: “15-Minutes City” Framework

Source: Moreno, 2021

- 6.3.5. Paris’ “15-Minute City” reimagines the city's land uses from discrete zoning to clusters of mixed-use neighbourhoods, in which majority of residents can fulfil their needs within 15 minutes trip from their home on foot, by bicycle or public transport (Moreno, 2021) (See Figure 6-2). This hyper proximity approach generates more health outcomes for its inhabitants as it promotes active mobility, social cohesion, sustainable & green development though city development.

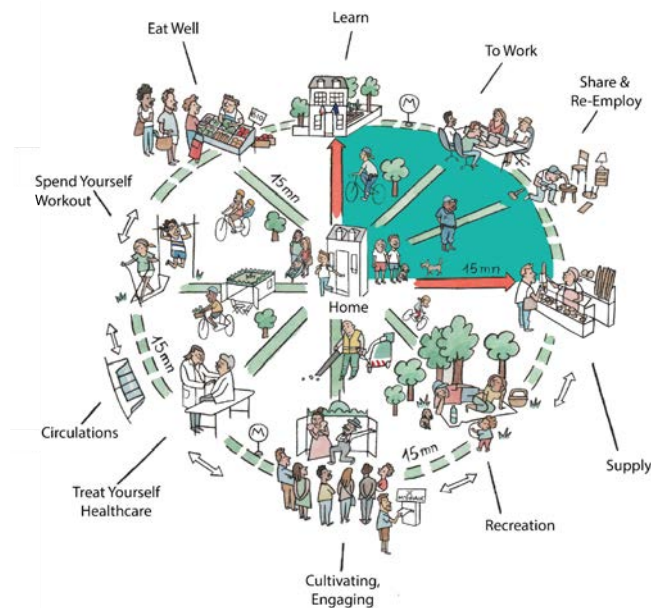


Figure 6-2: Components of “15-Minutes City”

Source: Hidalgo, 2020; Translated by: PlanGen, 2021

Promoting Hyper Proximity Through Mixed Use and Digital Integration of Spaces & Services

- 6.3.6. Promoting more compact mixed-use development is the key to achieve the “15-Minute City” concept. Essential urban services related to: 1) Living, 2) Working, 3) Commerce, 4) Healthcare, 5) Education and 6) Entertainment are to be provided within the “15-Minute” radius. The strategy promotes more community-based service delivery arrangements within the neighbourhoods. Therefore, city governments invest more on proximity-based needs within the neighbourhoods.
- 6.3.7. It has been proposed to decentralise the existing centralised office spaces through teleworking arrangements and coworking spaces in the future. It is expected that this strategy will help reduce the commuting times and allow people to adopt a healthier lifestyle.

Shift from Automobile Dependency to Active Mobility

- 6.3.8. “15-Minute City” relies on active mobility for people to get around within the city. Paris has already speeded up the construction of safe pedestrian and cycle ways to make sure that people can access every service within 15 minutes walk or cycle from home (See Figure 6-3). Paris is also planning to construct protected and well-connected cycle and pedestrian pathways with improved safety measures with technology to promote active transport within the city, thereby reducing the number of vehicles entering into the city. It is expected that this strategy will enable city officials to convert 70% of car parking spaces to other uses related to promoting active mobility (Peterts, 2020).
- 6.3.9. Active mobility is complementing the proximity-based service delivery in realising the 15-minute city, in which people can reach their necessities within 15 minutes of active transport.



Figure 6-3: Streets of Tomorrow
Source: Paris en Commun, 2020

Development of Multifunctional Spaces Using Chrono Urbanism Principles

6.3.10. Lack of public open spaces is also a major challenge faced by the Parisians. In order to overcome this issue, the Plan comes out with a concept of reversible and adaptable uses over time, promoting multiple uses on the same space over different time periods of day/week. As a part of this initiative, the government has started a programme to grant public access to schools’ playgrounds outside school hours (See Figure 6-4) (C40 Knowledge Hub, 2020; Moreno, 2021).

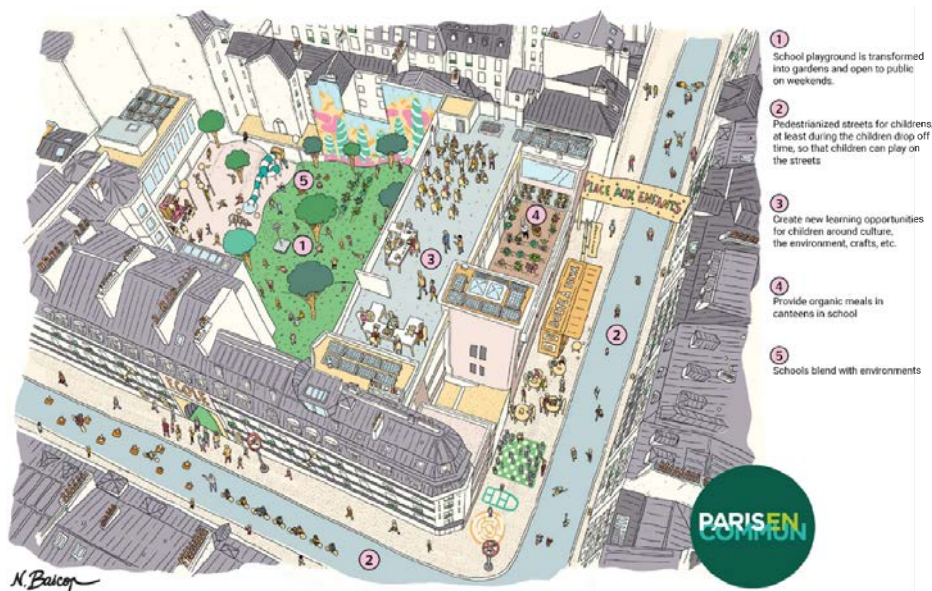


Figure 6-4: Proposed Multifunctional Spaces at Schools
Source: Paris en Commun, 2020

6.3.11. Road facilities like pavement structures and parking spaces have been converted into terraces and gardens to make those features as a part of green open spaces of the city, creating gardens at everyone’s doorstep. Paris is also planning to convert road spaces in front of schools into play

spaces for school starting and closing hours. Through various measures to increase green and open spaces, social cohesion would be reinforced with more space for interaction and gathering (See Figure 6-5).



Figure 6-5: Crossroads, Transformed into Neighbourhoods

Source: Paris en Commun, 2020

6.3.12. The major difference between the “15-Minute City” concept in Paris compared to other proximity-based approaches is its usage of digitalisation as a means to service provision and for optimisation of service delivery and city functions. Also, the quality of life of its citizens is at the core of this optimisation process. This approach leads to the economic boost of the city while enhancing social cohesion and interaction. Although not all the components of this ambitious plan are implemented, it allows the rethink of more human-centred urban development with the use of smart technologies.

6.4. Singapore

Background & Study Focus

6.4.1. Published in 2019, the HealthySG Taskforce report takes a holistic approach in providing 11 recommendations to enhance and create a healthier Singapore for all. The report envisions an improvement in the quality of lives of people with 1) the infusion of health impacts in the lives, policies and the environment, 2) a synergistic maximisation of resources, and 3) a co-delivery approach between the government and the citizens. The recommendations are provided around 3 “E”s—“Empowerment of Individuals”, “Engagement of Community”, and “Modifying our Environment” (See Figure 6-6). These provided vital strategic directions to plans and policies formulation.



Figure 6-6: The 3-E Approach Adopted in the HealthySG Taskforce Report for Healthy City Delivery
Source: Ministry of Health, 2019

6.4.2. In addition, strategic plans in line with the HealthySG Taskforce report including the Singapore Concept Plan 2011 and Master Plan 2019 issued by the Urban Redevelopment Authority (URA) and the Singapore Green Plan 2030, the most recent policy document giving direction to the physical development of Singapore, and relevant policy documents would be reviewed to draw key implications.

Enriching Quality of Housing with focus on Green, Smart, and Sustainability

6.4.3. Quality of housing is one of the key deliverables in terms of planning living environments. Urban green is deemed as a key element in building design in Singapore, as it is beneficial for health and the reduction of urban heat. The HDB Biophilic Town Framework is a detailed guide to demonstrate the integration of existing natural assets to the residential landscape, promoting “a greater sense of place, better health and well-being, and enhanced quality of life” for habitants (See Figure 6-7). In addition, URA’s Landscaping for Urban Spaces and High-Rises (LUSH) programme sets requirements to maximise the production of green open space within a building and gives incentives for the provision of communal and green spaces, especially for the private developments (See Figure 6-8).

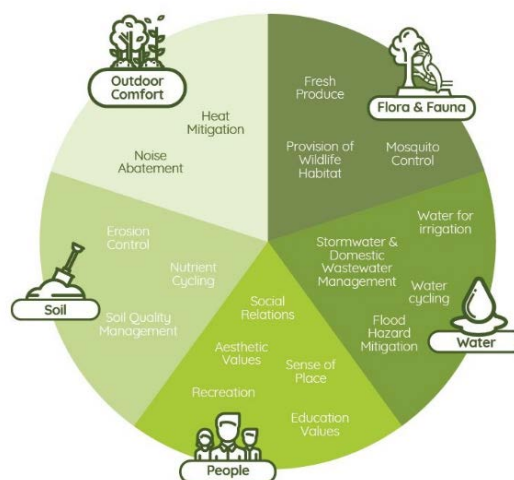


Figure 6-7: The HDB Biophilic Town Framework
Source: URA, 2021a

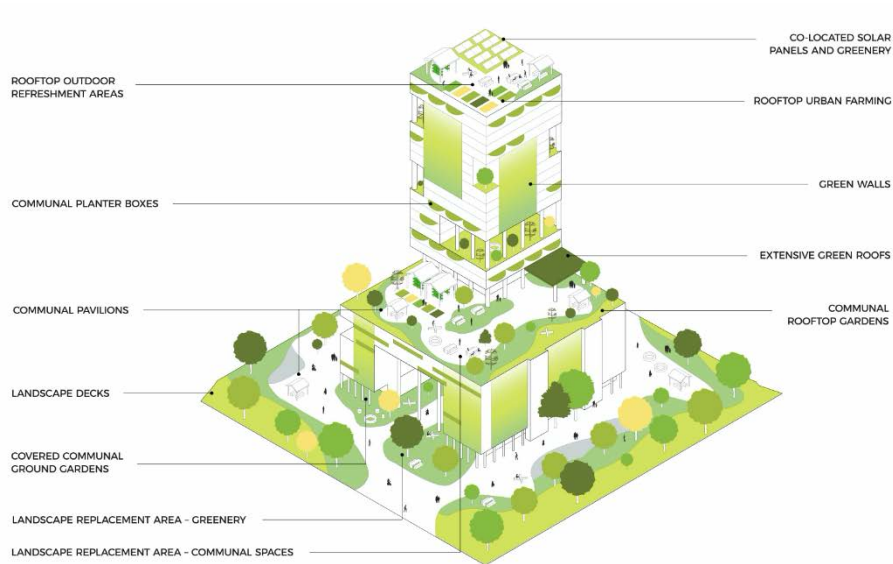


Figure 6-8: Landscaping for Urban Spaces and High-Rises (LUSH) Programme
Source: URA, 2021b

6.4.4. In the new town developments, smart and sustainable town models are employed in creating a quality work and living environment. This can be revealed in the master plans of Tengah, the Forest Town, and Jurong Lake District. Smart technology is used as an enabler to combine the district-level facilities and infrastructure, data-driven decision-making platforms, and innovative policies (See Figure 6-9), holistically create liveable and healthy towns and districts throughout the whole planning and development process.

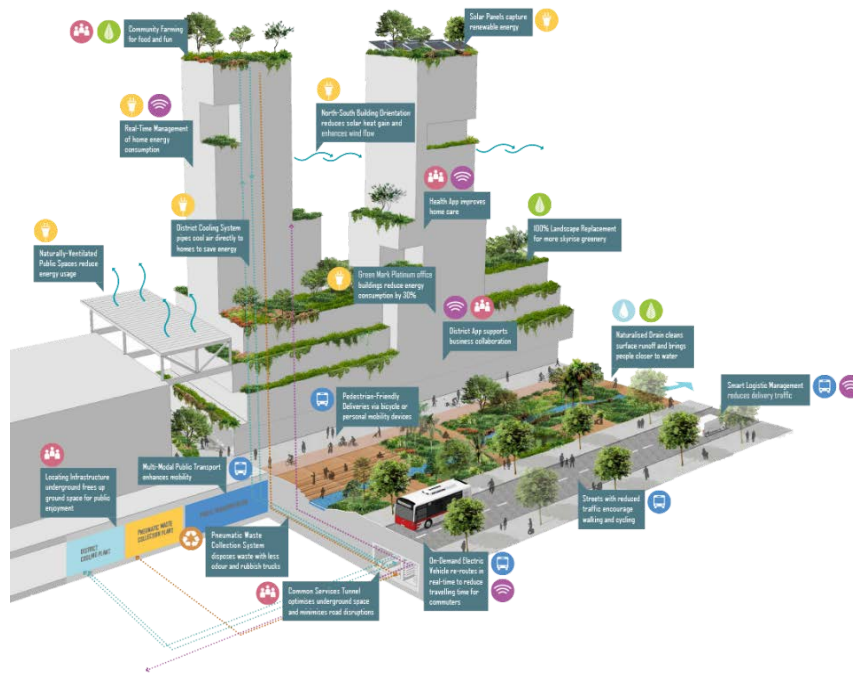


Figure 6-9: Smart Technology Infrastructure in the Smart and Sustainable Town Model
Source: URA, 2021b

Improvements of Accessibility, Affordability, and Quality of Healthcare Facilities

- 6.4.5. Healthcare of Singapore is safeguarded by the Ministry of Health (MOH). In particular, the Healthcare 2020 Masterplan was published by the MOH in 2012 which aims to increase accessibility, affordability, and quality of healthcare services for Singaporeans. The master plan laid the plans for healthcare facilities which include goals of a total of 24% increase in general and community hospital beds, and 9 in 10 HDB dwellers will live within 15 minutes of a polyclinic or community health assist scheme clinic by public transport. In addition to a population-based projection to the healthcare needs, the proximity-based approach is also an important factor in the allocation of healthcare facilities.
- 6.4.6. In addition, a MOH Office for Healthcare Transformation (MOHT) was set up in tackling the prevalence of chronic diseases and social determinants of health through the adoption of science and technology. Technology including Solutions, Technology, Evaluation and Piloting (STEP), and Data, Science and Technology (DST) are considered as enablers of the transformation of health promotion, primary care, and hospital care.

Enhancing Park Connectivity in promoting Active Mobility and Community Enjoyment

- 6.4.7. To attract more people to enjoy nature and be physically active for a healthier life, the Singaporean government does not only increase the provision of nature parks, but also improves connectivity and accessibility to parks. Such aspiration is realised through the Park Connectors Network, which is an initiative in creating a green matrix of paths through upgrading pedestrian walkways and cycling paths to create park connectors and recreational routes. Streets are no longer only for commuting, but also as community spaces for social interactions. These linear spaces not only serve for active mobility, but also enhance connectivity to their neighbourhood parks, provide additional recreational spaces and safeguard biodiversity.
- 6.4.8. It is known that there is a current provision of 360km of park connectors in Singapore with an aspiration of 500km provision in 2030 (See Figure 6-10) (The Strait Times, 2021). Parks, nature sites, and housing estates are connected in the form of loops to enhance accessibility, promote interaction with nature, and facilitate community formation.



Figure 6-10: Proposed Park Connector Networks in 2030
Source: The Strait Times, 2021

Urban Agriculture for Community Enjoyment

6.4.9. In addition, the encouragement of community participation in the greening of open spaces through urban farming can be observed with a co-delivery approach adopted by the Singapore government. The “Community in Bloom” movement encourages citizens to act as gardeners to green both public and private realms including schools, organisations, public housing estates, and private housing estates, creating synergies with the LUSH programme. A design guide for community gardening is published by the Singaporean government in facilitating the “Community in Bloom” movement, with the specification of crop types, including edible and non-edible plants, and the use and design of materials and facilities. This movement allows bottom-up policy delivery which fosters civic participation in healthy activities and attains a sense of community. The collected crops are also conducive to a healthy lifestyle with more local organic food consumption.

6.5. Key Takeaways from International Case Studies

6.5.1. The key takeaways from the case studies could be summed up in two aspects, strategy formulation, and spatial planning and design.

6.5.2. In terms of key takeaways for strategic direction formulation, a holistic approach with explicit goals is needed in achieving a healthy city. The co-delivery of strategies between the government and different stakeholders is needed to enhance health consciousness and civic participation. It is crucial to take into account the changing context of a new lifestyle and environmental challenges. The government should utilise digital twins and innovation as enablers to facilitate efficient delivery of healthy city solutions.

- 6.5.3. In terms of key implications for spatial planning and design, the planning of Hong Kong as a healthy city could take reference to the case studies. Considerations of health should be embedded in the planning and design process to ensure healthy development. Reversible and convertible spaces should be promoted to optimise the use of resources for health outcomes. To foster physical activity and social wellbeing, active design of the public realm (i.e. the streets and green, blue and public open spaces) should be incorporated. Connectivity and proximity of spaces are key to land use and infrastructure allocation to encourage the use of the spaces for a healthy lifestyle. Promotion of urban farming should be encouraged to foster community engagement in a healthy lifestyle and co-create a better urban landscape.

7. Stakeholders Consultation

7.1. Overview

7.1.1. Throughout the stakeholder consultation process, ten interviewees with diversified backgrounds of planning, smart technologies, health, built environment, and academic, were consulted. Ten interviewees can be classified into five clusters: (a) Planning Professional, (b) Academia, (c) Health Sector, (d) Smart Industry, and (e) Social Sector, in accordance with their individual background and expertise. The interviewee list and gist of stakeholder consultation are included in the Appendix C and D for reference.

7.2. Policies and Institutional Framework for Healthy City

7.2.1. Interviewees share similar thoughts on the current healthy city planning in Hong Kong. They criticise that there is an insufficiently integrated strategic approach in terms of Hong Kong as a healthy city. The current Hong Kong 2030+ focuses on the liveability of the city and under this broad framework of liveability, planning for a healthy city by using active design is considered a dimension contributing to a livable city.

7.2.2. However, the healthy city is mainly advocated as a subsidiary concept under the context of a livable city, but indeed other strategic measures stated in the current strategic plan can also be relevant to the healthy city concept with overlapping effects. Besides, interviewees doubt that a healthy city is not only about active design and directly related to healthcare, but interactions between socio-economic and environmental correlates are also important for the development of a healthy Hong Kong. They emphasise that these interactions foster a more comprehensive and holistic approach towards planning a healthier Hong Kong.

7.2.3. In addition, the interviewees also highlight the relative unsynchronised efforts between departments within the government bureaucracy. This inconsistency deters the effectiveness of a healthy city planning, in which different departments seem to make individual efforts instead of adopting a collaborative approach. The interviewees stated that there can be more collective or mutually-aware individual actions taken across departments, with mutual awareness on the different roles of departments in contributing to healthy city planning, so that the promotion of a healthy city becomes more holistic and effective. The interviewees, as a result, suggested that a comprehensive strategic approach with concerted effort should be adopted to cater all health correlates at different levels.

7.3. Optimisation of Land Resources

7.3.1. Given a limited land area and dense urban environment, interviewees comment that the high-density nature of Hong Kong is not only a challenge but also opportunities for the

government to rethink how to optimise the usage of precious land resources, such as the transformation of existing and underutilised land uses to achieve the “Health for All” vision. Indeed, the Hong Kong 2030+ has identified various ways in exploring new land for development, such as leveraging technological advancement for smart use of land and utilising underground and caverns to release surface area for other development.

- 7.3.2. Interviewees also highlight that the high-density nature of Hong Kong can stimulate physical activities. Yet, many spaces with potentials are underutilised and were not planned with flexibility in functions. The interviewees suggest the conversion of underutilised GIC facilities for public usage can encourage physical activities. For example, unpopular community halls can be converted for openly accessible public spaces occasionally or regularly.
- 7.3.3. Furthermore, interviewees also reflect that the locals have complained on the limited walking spaces, that vehicular transport is prioritised over pedestrian walkability, leading to an unpleasant environment. Indeed, there are numerous opportunities to fully utilise streets for diversified activities. The government should reimagine the multifunctionality of streets in promoting further strategic actions.
- 7.3.4. The maximisation of land use potential is highly associated with the transformation of existing and underutilised spaces with the purpose of pursuing citizens’ healthy lifestyle and fostering resilience and sustainability in urban fabrics.

7.4. Potential of Public Spaces to Promote Healthy Lifestyle

- 7.4.1. Essentially, green and open spaces are the most direct spatial elements to stimulate physical activities. Interviewees reflect that the issue of improper management and facility planning lies particularly in neighbourhood level of open space. Most of the urban parks are deemed unattractive for people to perform physical activities with the unpleasant surroundings and disconnected recreational grounds, which appear to be scattering around the community in small patches.
- 7.4.2. While Hong Kong enjoys a wide range of country parks for people to carry out recreational activities, the importance of some of the local open spaces in leading to a healthy lifestyle is relatively neglected. With effort already made to improve the accessibility and amenities of existing country parks and waterfronts, improvements to the quality, connectedness, facility planning of local open spaces through street beautifications and participatory approach are critical to promote their utilisation for active exercises. The first park in the neighbourhood is fundamental for people to cultivate a habit of physical and recreational activities, stimulating their interest to enjoy green, blue and open space in the other districts.
- 7.4.3. Apart from green, blue and open spaces, streets where we get access to every day should also serve as public grounds for encouraging active lifestyle. Interviewees state that to cater for the

rising considerations for healthy lifestyle and social cohesiveness, it is necessary to endow the street space to fit the changing context, as streets in Hong Kong primarily serve the function of walking, while questions are laid upon the feasibility of transforming streets into better public spaces and social nodes.

7.5. Differentiation of Conditions in Housing Types

- 7.5.1. Health inequality is illustrated in various dimensions in Hong Kong, particularly in the housing conditions. Most interviewees pinpoint that housing is significant in influencing different social groups' ability in pursuing health, as the size, quality, sceneries and aligning provisions of housing would affect mental state and ability in performing active activities. In Hong Kong, people who cannot afford housing of a higher quality and sizes are subject to poorer living conditions in small sized nano-flats, older buildings with less attention to health-related designs, as well as substandard drainage systems. The interviewees recommend improving health-related standards in building and development guidelines in improving the living conditions of all, such that people living in different types of housing can enjoy the benefits of immersing health-related elements in their residence.
- 7.5.2. Apart from that, the interviewees also comment on the relatively lack of communal spaces in new public housing estates to cater needs of active activities and social interactions, as compared to the previous public housing models. Likewise, in different kinds of private housing developments, there are also varying extent of communal space and amenities provided, depending on the scale and prestigiousness of projects. To better fit the public demand for recreational spaces for active lifestyle, it is recommended to incorporate diversified functions, especially health promoting elements into existing housing configurations for different developments. Integrated long term planning approach is required to plan ahead for the existing and upcoming housing developments.

7.6. Illustration of Preventive Healthcare Concepts

- 7.6.1. In the planning for a healthy city in Hong Kong, the crux, which is preventive healthcare over cure, is not sufficiently fostered, as some interviewees point out. For instance, even with the aim of driving for a healthy lifestyle, due to the low utilisation rate of facilities and the insufficient flexibility for land use conversion in the initial planning of the parks managed by Leisure and Cultural Services Department, the effectiveness of open space planning is reduced. The function of open spaces as a venue for preventive healthcare and conversion into emergency uses is under-elicited. This example also shows the discrepancy between the planning ideals and actual users' needs.
- 7.6.2. In addition, the interviewees state that existing public health facilities cannot comprehensively cater for preventive healthcare. Clinics in the community illustrates the issue. Given the high

proximity of clinics in every community, they are not primarily serving the purpose of preventive healthcare. Instead, mainly curative services are provided.

- 7.6.3. Aforementioned, Hong Kong 2030+ attempts to strategically alleviate burden on public health services, putting greater emphasis on cure over prevention that is not the main piece in the existing medical system. Even the existing DHC advocates general disease prevention, screening and chronic disease management, health-seeking and self-monitoring behaviors such as healthy diet and lifestyle are less emphasised. It is recommended by interviewees to incorporate smart technologies in spatial planning for long-term preventive healthcare facilities. Instead of focusing on the micro-scale planning for DHC's functionality and facilities which have already been considered gradually, the key of successful preventive healthcare would be the provision of supporting services such as regular checkup opportunities. Before actualising the needs for regular checkups, the public also has to be first aware of the needs of proactive health management as driven by community-based effort in health city planning. Thus, interviewees suggest that the community-based management approach should be adopted by integrating accessible preventive healthcare elements in the community, such as communal spaces and improvement in urban parks.

7.7. Essentiality of Public Involvement

- 7.7.1. Interviewees consider that health-related campaigns targeting the public are mainly health talks and advertisements primarily advocating physical exercise, which are one-off in nature and may not effectively cultivate a healthy lifestyle in the long term. While foreign examples show that healthy city planning demands participatory planning and contribution of civil society's knowledge and opinions, it is suggested by the interviewees that the Hong Kong government should engage more stakeholders in the decision-making process when shaping the built environment to make greater social impacts in the long run and channelling to the public more effectively.
- 7.7.2. In essence, community participation in spatial planning for a healthy city would be required. The public can get involved in planning for their public spaces and neighborhood spaces through participatory approaches, gaining their awareness on using public spaces as foundation for a healthy lifestyle. On top of ordinary community engagement, interviewees from the technology industry emphasise the importance of applying technology and data platforms for gaining public awareness on healthy city planning. Through acquiring the public with health-related and disease statistics, people can have a comprehensive overview of the health trends and be more aware of related policy advocacy. Concomitantly, not only does the government develop mutual trust among the civil society for data contribution, but it is also vital to inform and educate the public regarding how to effectively utilise the data for health purposes. With the understanding from the general public, smart technologies can facilitate co-design and participatory planning processes, so as to foster inclusiveness and reduce digital divide for community planning.

7.8. Key Takeaways of Stakeholders Consultation

- 7.8.1. In short, the Consultancy has drawn insights from stakeholders consultation. The interviewees have provided their opinions on several issues as mentioned above, such as the potential improvement of open spaces to promote healthy lifestyle, and the essentiality of getting the public involved in the planning stages. These insightful interviews have further helped the Consultancy better understand the current situation and practices in relation to Hong Kong's healthy city development.
- 7.8.2. Meanwhile, reviewing the findings from stakeholders consultation, the Consultancy also pays attention to institutional issues that may hinder healthy city planning. For instance, interviewees suggested that there is inadequate collaboration between the governmental departments. Indeed, having consistency and mutually-aware individual actions between departments would facilitate the holistic planning procedures of a healthy city. The Consultancy have, however, considered the difficulties to tackle systematic issues in spatial planning's perspective. Thus, issues with little relation to spatial planning will not be addressed in this report.
- 7.8.3. More than that, the Consultancy also identifies the essence of participatory approach as a key to planning a healthier Hong Kong. It does not limit to getting the public involved in public space planning, but such public engagement can also be about educating the public on health-related concepts, such as the importance of preventive healthcare. After all, participation should cater for all social groups, with minimal digital divide.

8. Strategic Plan for Healthy Hong Kong

8.1. Overview

8.1.1. Fitting the vision statement into the context of Hong Kong, the evaluation of prevailing health related issues, Hong Kong 2030+'s planning insights, the case studies empirical examples, and insights from stakeholders consultation inspired the formulation of the following **four strategic directions**:

- 1) Strengthen Planning Guidelines to Promote Healthy Developments
- 2) Empower Flexible Space Usage for Resilience, Emergency and Healthy Practices
- 3) Transform Spaces for Customised Active Mobility
- 4) Enhance the Open Spaces for Healthier Lifestyle

8.1.2. These four strategic directions would lay a solid foundation for the recommendation of strategic actions, which are vital components not only optimising spatial potential in promulgating healthier lifestyle and active mobilities for Hong Kong citizens, but they are asset-based, holistic and cutting-edge in nature that the city's overall sustainability and resilience can be ultimately reinforced in the long run. It is believed that all the strategies can come together to establish a **Healthy City Blueprint** complementing the Hong Kong 2030+, strategically strengthening Hong Kong and its citizens' physical, mental and social well-being as a whole.

8.2. Strengthen Planning Guidelines to Promote Healthy Developments

8.2.1. To start with, the first strategic planning direction proposed by the consultancy is in relation to planning guidelines: **Strengthening Planning Guidelines to Promote Healthy Developments**. The current COVID-19 pandemic has drawn the consultancy's attention on the current living environment in the society. The pandemic has exposed issues of living conditions, such as the ageing drainage system, poor ventilation, and even health differentiation between groups of people. Given the current conventional impact assessment system has been adopted for more than 2 decades, the consultancy, thus, proposed the following strategic actions.

8.2.2. To achieve the first mentioned strategic planning directions, the consultancy suggested two strategic actions as below. The promotion of Health Impact Assessment in spatial planning, and the incorporation of health-related elements into the existing building design standard. In the following, these two actions will be illustrated.

Promoting the Health Impact Assessment in Spatial Planning

An Overview of Health Impact Assessment (HIA)

- 8.2.3. According to WHO, the definition of health impact assessment (HIA) is "a combination of procedures, methods, and tools by which a policy, programme, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population." (ECHP, 1999, p. 4). HIA is essentially a systematic set of technical tools and value systems that aim to maximise the positive impacts and minimise the negative externalities of a policy, plan, or programme on health, by informing decision-makers of the specific impact that a particular decision may have and helping the public to participate in the decision-making process.

HIA and Urban Health Needs

- 8.2.4. Health is not something new to practice planners. While health is central to the existing EIA and development control system, it is often narrowly defined and health issues such as mental health, well-being, or health equity are often missed. In San Francisco, for example, a routine EIA for the proposed demolition of an apartment building did not demonstrate adverse environmental impacts to residents. However, residents and tenants were concerned that the assessment ignored human health impacts. To address this problem, the local Department of Public Health is involved in a more specific analysis of health factors. The resulting HIA provided evidence of possible negative health impacts, including psychological stress, fear, and insecurity due to eviction; crowded or substandard living conditions due to limited affordable housing; food insecurity or hunger due to displacement - all of which are aligned with the community concerns and which had not been addressed in the EIA (American Planning Association, 2016).
- 8.2.5. Hong Kong is to some extent a healthy city in terms of physical health, particularly, its long life expectancy. To be sure, the existing EIA and development control system have played a crucial role in improving physical health and life expectancy. These achievements are the foundation of a healthy city. However, there are still higher hierarchies of urban health needs that could be achieved (See Figure 8-1). This is particularly true for a global, high-income city like Hong Kong. Building on the existing EIA and development control system which safeguard the basic elements of urban health, HIA can be added as a useful tool to pursue higher hierarchies of urban health needs.



Figure 8-1: The Hierarchy of Urban Health Needs
Source: Asian Development Bank, 2020

HIA and Planning Efficiency

- 8.2.6. Although the EIA process mandates the consideration of human health as part of the scope, EIA does not typically extend the environmental analysis to include an analysis of health outcomes. Therefore, very often, the health implications are not explicitly addressed in EIA. These unaddressed gaps often induce more negotiation cost and hinder planning efficiency.
- 8.2.7. An example is the controversies on the planning proposal of Kennedy Town in 2015. The proposal involves decontamination works that require the demolition of a garden located nearby the ex-incinerator. An EIA has been conducted by the government. Given the contamination level of the site and the precautionary principle, the EIA report supports the decontamination works and the demolition of the garden. However, the results of EIA without explicit health implications have been questioned by the residents. After a 2-year negotiation centered around the potential health impacts, the decontamination works continue without the demolition of the garden. While the plan is carried out, large transaction costs have been incurred in this process, resulting in low efficiency.
- 8.2.8. Note that both the government and the residents have their own health considerations: it may be nothing wrong for either the government to demolish a potentially contaminated garden, or for the residents to preserve an open space full of greenery. The problem, however, is an EIA alone cannot help to make a consensus between both sides.
- 8.2.9. HIA may help solve this dilemma. By conducting HIA for the planning proposal, the health risks, impacts, and opportunities can be explicitly and comprehensively examined and revealed at the

early stage. For one, HIA will analyze the health impacts based on EIA findings rather than merely provide a series of scientific numbers without explicit health implications. For another, HIA will assess the health impact of demolishing the garden on the residents (both physical health and mental health) and investigate how different segments of the population may be affected. By assessing the health and equity impact of different development scenarios (e.g. with or without the demolition of the garden), HIA can address the residents' concerns at the early stage and increase the planning efficiency (Bhatia & Wernham, 2009).

HIA and Urban Competitiveness

- 8.2.10. Finally, one may have questions about the cost of conducting HIA. But just as the other planning studies, the benefits of HIA are larger than its costs. Economically, health is a fundamental condition of productivity and creativity and is a key driver of city competitiveness in the post-pandemic era. The importance of HIA in spatial planning has been increasingly highlighted in both developed and developing contexts (Asian Development Bank, 2018; Asian Development, 2020). Facing more competition from other global cities, if Hong Kong is unwilling to fall behind, it needs HIA to safeguard and promote urban health, which in turn ensures its competitiveness in attracting global talents and capital.

The Implementation of the Health Impact Assessment (HIA) in Hong Kong

- 8.2.11. As cities are complex and ever-changing systems, an HIA implementation framework should have a dual focus on existing urban areas and new urban plans and development projects. For the implementation time frame, we propose a retrospective HIA for existing urban areas (such as Yau Tsim Mong District) in a short term. The objective is to address any current health risks and impacts and ensure expansion plans for further development incorporate effective mitigation and health promotion actions. A prospective HIA for new planning applications or sub-regional plans can be conducted with integration into EIA in the medium term. This ensures the new plan/project is developed in a strategic manner that incorporates, plans for, and manages health risks, impacts, and opportunities right from the beginning. In the long term, we propose a prospective HIA for new strategic planning (such as Hong Kong 2050) with integration into SEA. The objective is to ensure that the strategic planning is developed in a way that health risks, impacts, and opportunities have been comprehensively considered at the early stage.

HIA for Existing Urban Areas

- 8.2.12. **Step 1 - Establishment of a Cross-sector, Multidisciplinary Urban Health Team:** An interdisciplinary and cross-sectoral urban health team should be established under the guidance of a steering committee headed by the chief executive, which ensures the assessment can be conducted with strong coordination among governmental departments, public and private stakeholders, and communities. At the same time, the team should mobilise government officials, expertises, and key opinion leaders to raise awareness on the importance of HIA. At the end of this stage, a network of individuals and organisations should be built. A minimal goal is

that data sharing is available between and within some stakeholders, organisations, and communities.

- 8.2.13. **Step 2 - Scoping and Health City Profiling:** The urban health team will define the scope of the assessment and set the indicators to develop a healthy city profile. The geographical scale must be defined. An ideal scope of the assessment is the whole territory, but this is often highly resource-consuming and unworkable, at least in a short term. Once the geographic scope is agreed upon, further debates on the scope of urban health issues can be conducted. This issue-based scoping can be a rapid or comprehensive one using generic matrices and checklists. The scope can be refined iteratively by the cross-sector team with inputs from the public through both physical platforms such as community workshops and virtual platforms such as apps and websites.
- 8.2.14. Data collection is needed to articulate identified health issues such as current status (e.g., disease and disability rates, care needs) and determinants of health outcomes (e.g., knowledge, attitudes, urban design, and/or empirical issues). Public health agencies must support the data collection. If available, the disaggregated, socio-demographic data (often secondary) such as sex, age, and disability can be included. If required, additional quantitative data can be also collected from questionnaire surveys at the household level. When a controversial issue warrants in-depth study and further information, more qualitative data can be collected. For example, key informant interviews and/or focus group discussions can be conducted with community stakeholders and representatives of relevant organisations.
- 8.2.15. Indicators must be chosen carefully, as they may significantly, for better or worse, affect the framing of a health issue and the consequent actions. Different types and levels of indicators should be proposed, which include outcomes, impacts, outputs, inputs, and equity. Conventional data mechanisms and existing databases must be used to select, collect, and analyze indicators, but over-reliance on conventionally used indicators should be avoided so as not to impede the invention and adoption of new and creative indicators.
- 8.2.16. It is also notable that the data reported by the government often differ from the perceptions reported by residents in surveys and focus groups, and from what was observed in the field studies. Using more than one data source can improve the validity of data, contributing to a more accurate and comprehensive assessment. In developing the indicator set, extensive community engagement is needed to identify place-based health and equity issues. Team members must consult with the community, policymakers, and each other. Although numerous sets of urban health indicators can be found in the literature, the indicators selected for HIA should be intentionally and locally relevant.
- 8.2.17. After defining the scope and indicator set, data can be assembled by relying on existing data sets from different urban sectors to the extent possible. While new data collection may be necessary, it is often financially burdensome, time-consuming, and unsustainable. Following

data collection, the quality and validity of the data should be assessed. Further actions may include the negotiation of formal data-sharing agreements, the establishment of data-sharing repositories, database management, and commission of new surveys.

- 8.2.18. **Step 3 - Assessment and Prioritisation of Risks and Adverse and Positive Health Impacts:** The health risks, impacts, and opportunities listed in the registry are assessed, then prioritised to ensure that future actions have the most positive effects possible. The health risks, impacts, and opportunities listed in the registry are assessed and then prioritised to ensure that future actions will maximise the positive impacts. All stakeholders should be involved in setting priorities by assessing the evidence. Facilitating deliberate and careful debates is critical, for example, through multi-stakeholder priority-setting meetings and workshops.
- 8.2.19. Conversations with residents, service providers, and others can generate important but often ignored rationales and explanations about the possible causes and consequences of urban health challenges. At the end of this step, stakeholders should have learned about the health problems and associated causes and contextual determinants so that they can help prioritise them. The prioritisation of risks, impacts, and opportunities should particularly account for modifiable areas of the built environment and urban services in order to optimise the way for enhancement. Stakeholders should identify desired targets for each identified risk or impact, as well as broadly described opportunities for action. The assessment and ranking of health risks, impacts, and opportunities will be reported and available to the public.
- 8.2.20. **Step 4 - Evaluation and Recommendation of Risk-mitigation and Health-promotion Options:** Possible responses, including structural and non-structural options, must be developed and mapped out. This mapping practice should be collaborative, just like the assessment practice. The map should provide explicit and workable options for government and communities when addressing priority health issues. This step should be highly consultative, involving relevant administrative departments and communities. The development of structural and non-structural options can draw on a menu of strategies and intervention options, using innovative approaches such as future thinking and foresight.
- 8.2.21. Having a cross-sector HIA team, external specialists, and community brainstorming can generate more ideas. To be sure, the community should have input on priority issues and actions. At the end of this step, a list of evidence-based options should provide a broad idea of possible responses to priority health issues. These options and responses can be described in a plan outline - a working document that explains urban health risks and opportunities and discusses the nature of each option proposed (structured vs. unstructured) and briefly outlines each response, including the expected roles and responsibilities of stakeholders and resource requirements for implementation.

HIA for New Urban Master Plans and Projects and its Integration with EIA/SEA

8.2.22. The HIA implementation processes for new urban master plans and projects are similar to the above, including

- Step 1 - Establishment of a cross-sector, multidisciplinary urban health team
- Step 2 - Scoping and health city profiling
- Step 3 - Assessment and prioritisation of risks and adverse and positive health impacts
- Step 4 - Evaluation and recommendation of risk-mitigation and health-promotion options

8.2.23. There are slightly different implementation details between existing urban areas and new master plans and projects. For example, if HIA is integrated into EIA/SEA for new master plans and projects, the scoping should be aligned with the latter. The focus of this section will be the opportunity to integrate HIA into EIA/SEA for new master plans and projects.

8.2.24. Figure 8-2 illustrates the current integration between planning and EIA/SEA in Hong Kong. The coverage of SEA and EIA is largely the same, including air quality, noise, water quality, cultural heritage, waste management, ecology, fishery, and landscape. The application level of SEA is at the early stage of proposed policies, plans, and programmes, whereas EIA is applied at the project level (i.e. designated projects listed out in Schedules 2 and 3).

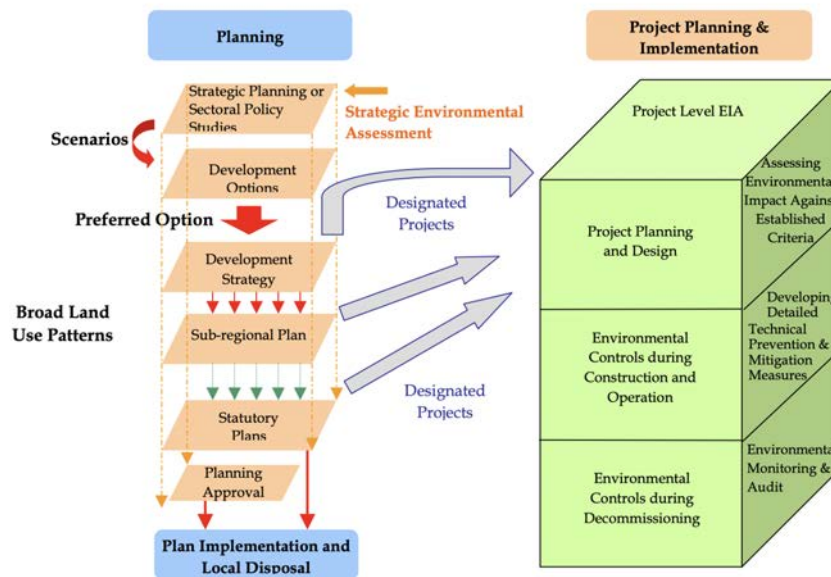


Figure 8-2: Integration between Planning and EIA/SEA

Source: Environmental Protection Department Hong Kong, 2003

8.2.25. In light of these institutional designs, HIA can be integrated into SEA for the plan-making process, including strategic planning (e.g. Hong Kong 2030+), development strategy (e.g. North Economic Belt), sub-regional plan (e.g. development of Lok Ma Chau), and statutory plans. Figure 8-3 illustrates where and how an HIA can be integrated into the generic SEA process. For

example, during the first phase of plan development, which includes gathering evidence and preparing questions and options for local plans, HIA and public health input can help screen these options for possible health impacts.

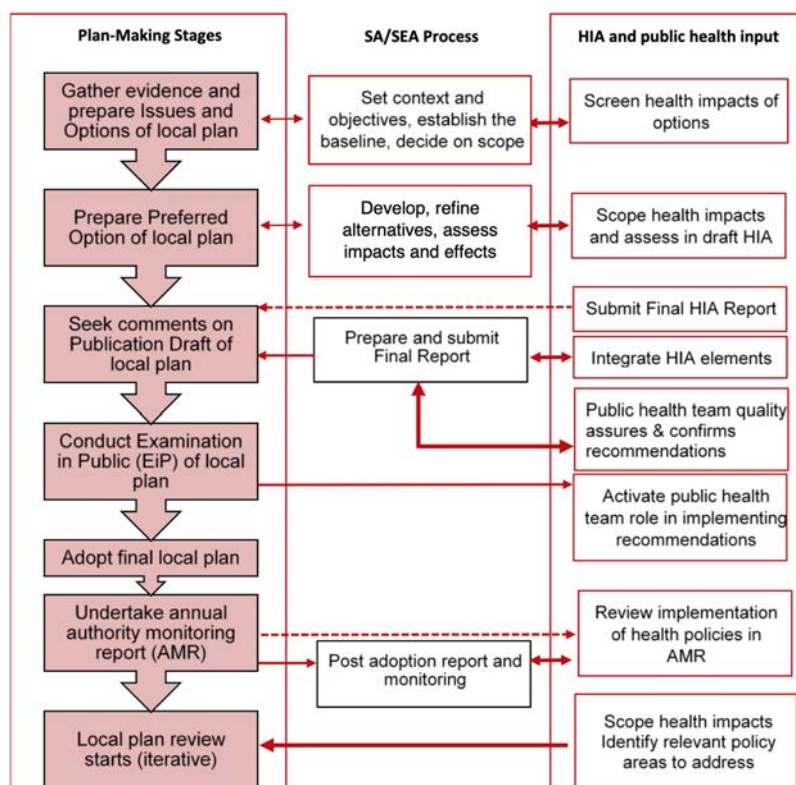


Figure 8-3: Integration Between HIA and SEA in the Plan-Making Process

Source: Public Health England, 2020

- 8.2.26. On the other hand, HIA can be integrated into EIA for the planning application which involves designated projects listed out in Schedules 2 and 3. Figure 8-4 illustrates where and how an HIA can be integrated into the generic EIA process, as well as being undertaken as a standalone assessment if it meets a certain local trigger and is not subject to an EIA. If an HIA is integrated into an EIA, it should be undertaken to the same quality, scope, and scale as a standalone HIA. For example, the HIA process and public health input can help screen the significance and likelihood of health effects when preparing the development brief and design (the first planning application phase).

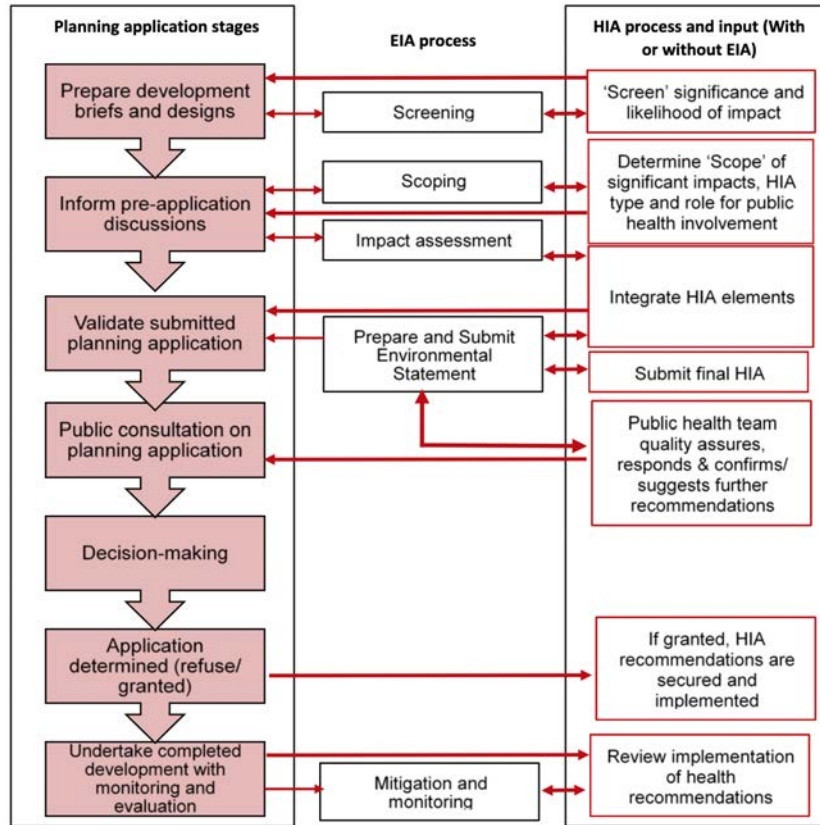


Figure 8-4: Integration Between HIA and EIA in the Planning Application Process

Source: Public Health England, 2020

8.2.27. Indeed, EIA/SEA are well-developed systems, and the key to conducting an efficient and effective HIA is by standing on the shoulders of the giants. In practice, the output of many EIA/SEA findings can be inputted to the HIA. Table 8-1 illustrates the EIA chapter headings for a highway project. Five columns show positive or negative health outcomes that may be affected by changes in relevant health determinants.

Chapter Headings	Examples of Health Determinants	Communicable Diseases	Noncommunicable Diseases	Injury	Nutritional Issues	Mental Illness and Well-being
Air Quality	PM ₁₀ and NOx, dust		x			
Cultural Heritage	Stress associated with attachment and orientation ^a					x
Landscape	Stress associated with attachment and orientation					x
Ecology and Nature Conservation	Access to quality green and blue space; venomous plants and animal; loss of wild foods and biodiversity	x		x	x	x
Geology and Soils	Groundwater		x			
Materials (construction)	Contaminated soils, flooding, nuisance	x	x			x
Noise and Vibration	Day and night time traffic noise and number of receptors, vibration; noise and vibration nuisance		x			x
Effects on All Travelers	Routes for nonmotorized users, severance, driver stress; Road uncertainty, confusion, access to public transport, nonmotorized user safety		x	x		x
Community and Private Assets	Involuntary resettlement; land take, access; greenspace, facilities; developments; access to business; severance					x
Road Drainage and the Water Environment	Floods, surface water quality	x	x	x	x	
Traffic and Transportation	Journey times; congestion; traffic flows; speeds; road safety; rat-running ^b		x	x		x
Lighting	Intrusive lighting					x

Table 8-1: Examples of EIA in a Highway Project and Potential associated Health Outcomes

Source: Asian Development Bank, 2018

8.2.28. However, a routine EIA does not extend to include a health assessment. For example, when drafting a plan, EIA is conducted to estimate the air quality level. However, the concern of to what extent, say, the change of air quality will affect the heart disease is often missed in EIA and this will be complemented in an HIA by translating the EIA data through a health lens.

8.2.29. In its simplest way, HIA can be another chapter in EIA to conclude with potential health impact. The objectives of an HIA chapter in an EIA include:

- Bring health-related statements from all other EIA sections and engineering design documents into a chapter that can be read and understood by project officers, other assessment and development practitioners, public health experts, and the public.
- To identify any health gaps, assess the importance of health impacts, and make sound recommendations for managing health impacts (for more details, see steps 3 and 4 in the previous section).

8.2.30. These objectives can be met by the following actions:

- Read drafts of other chapters to summarise health-related material.
- Identify gaps in health determinants neglected in other sections and fill those gaps.
- Avoid duplicated material in other sections of the EIA, but rather cross-reference them extensively.
- Avoid duplicated recommendations made in other chapters, but rather cross-reference and clarify based on health consideration.
- Sum up the importance of health-related impacts in other sections, considering residual effects, and making other recommendations, if necessary, to reduce impacts to acceptable levels.

- 8.2.31. Finally, financial budgets for HIA implementation are often limited and need to be carefully managed. By integrating the HIA into the EIA/SEA, budget control is much easier. As a rough target, the budget for an HIA can be 10% - 20% of an EIA/SEA budget (Asian Development Bank, 2018). The budget is distributed between the different procedural stages involved in completing the HIA. One of these is data collection. Following the rule of thumb, baseline work should be limited to less than 50% of the overall financial budget available for the HIA (Asian Development Bank, 2018). This frees up time and financial resources for the other steps.

Incorporate Health-related Elements into Existing Building Design Standard

- 8.2.32. This strategic action aims to encourage property developers to integrate health-related elements into building design by enhancing the current building design standard. It is expected that the indoor living and working environment are getting more important to human well-being in terms of both physical and mental health, especially under the current pandemic situation and the new work-from-home arrangements that people are forced to stay indoors most of the time. In view of this, the introduction of new elements and refinement of the existing elements regarding healthy building design in building design standards is a crucial action for building Hong Kong a healthy city.

Current Effort on Healthy Building Design Standard

- 8.2.33. In Hong Kong, Beam Plus and the Sustainable Building Design Guideline are the two major standards that provide a solid framework in terms of greenery and environmental aspects in building design. Nonetheless, unlike the Building Ordinance, which is legally binding, the above two standards act as certifications that are carried out on a voluntary basis. They serve as the prerequisites for granting GFA concession in new building development. With the incentive of 10% bonus GFA, property developers are more willing to follow the BEAM Plus and Sustainable Building Design standard to incorporate green elements in building design, maximising the profitability of development projects.

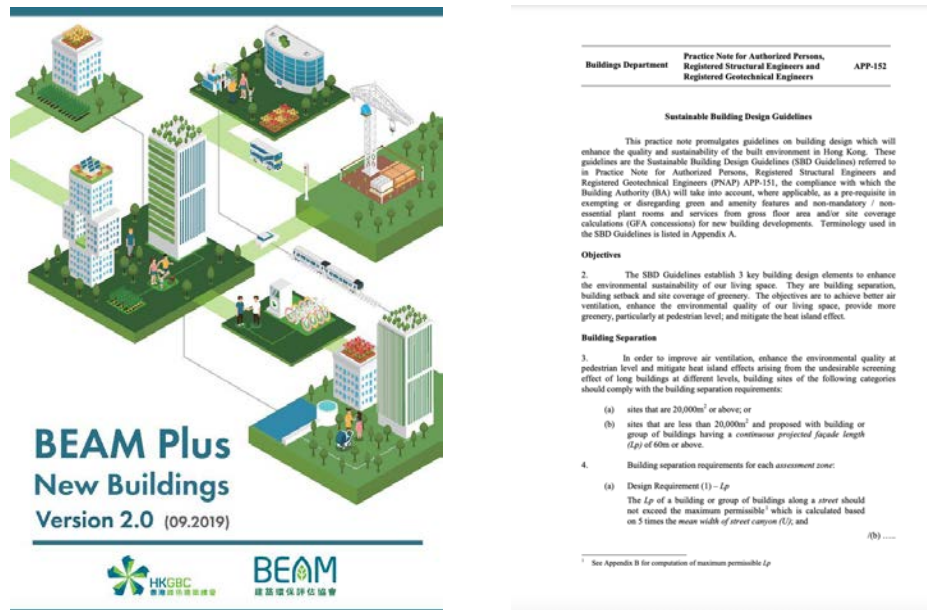


Figure 8-5: BEAM Plus New Buildings & Sustainable Building Design Guidelines
Source: HKGBC, 2019; Building Department Hong Kong, 2016

- 8.2.34. BEAM Plus is the major building design standard adopted by property developers. As an environmental assessment tool, BEAM Plus provided sets of criteria for green building design, including but not limited to energy, water, site impacts and hygiene assessments. The BEAM Plus standard would be reviewed and updated regularly. With the recent update in 2019, the BEAM Plus 2.0 has been published. The new standard includes an additional assessment aspect of “Health and Wellbeing” with more emphasis put on how the building design could promote the wellness of people. Under the new chapter, assessment on health-related elements in building design such as the percentage of light penetration, air quality, and noise pollution is set (HKGBC, 2019). Yet, the standard is remaining an environmental-oriented standard instead of a health-oriented standard.
- 8.2.35. Sustainable Building Design Guideline is one of the practice notes published by the Building Department that aim to improve the environmental quality of living space. It mainly gives out the guideline on three major building design elements which are building separation, building setback and site coverage on greenery. Through monitoring these aspects, it is believed that better air ventilation, more greenery, and mitigation of the heat island effect could be achieved (Building Department Hong Kong, 2016).
- 8.2.36. The above guideline has successfully regulated private development to incorporate such designs that enhance the living environment by providing the incentive of extra GFA. In 2020, over 70 projects have complied with the guidelines and applied for the GFA concession (Building Department Hong Kong, 2021). Following this prosperous policy, it is recommended that the government can further revise the content and elements in these building design standards by adding more health-related guidelines into them, making further efforts on improving the living and working environments in Hong Kong.

Short-Term Action: Review of Existing Standards and Benchmarking with Foreign Standards

- 8.2.37. In the short term, a review on the above building standards is suggested. Even though the current standards have already been carefully designed to put forward green building design, there is still room for improvement when compared to other foreign building standards that aim to promote a more healthy living space.
- 8.2.38. One of the examples that are suggested to benchmark with the current standards is the WELL Building Standard. As one of the healthy building standards adopted worldwide, the WELL Building Standard aims to guide the design of buildings to support human health and wellbeing. Under the 10 concepts, over 100 guidelines on how to create a healthy living environment are suggested in the standard.

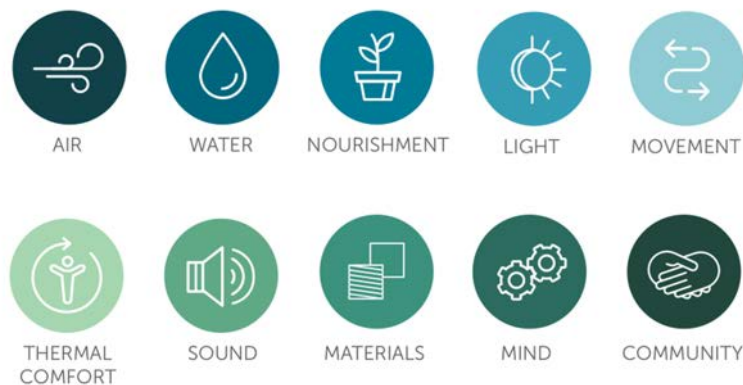


Figure 8-6: 10 Concepts Under the WELL Building Standard
Source: IWBI, 2020

- 8.2.39. For example, in the “Mind” chapter, it is suggested that both indoor and outdoor restoration spaces should be provided in office buildings to support the mental wellbeing of inhabitants. In the restoration space, workers can mentally distance themselves from work and engage in restorative activities, thus lowering their stress levels. Another example of healthy features regarding residential buildings suggested is the provision of sufficient cycling facilities such as parking space and maintenance tools. Through the provision of such amenities, it aims to encourage residents to adopt active mobility and increase their physical activity level (IWBI, 2020). The above standards are not included in the existing standard adopted in Hong Kong, and it is believed that these standards also bring positive outcomes to health conditions of the building users both physically and mentally. As a result, these elements are suggested to be added into the existing building standard in Hong Kong.

Medium-Term Action: Update Non-statutory Building Standard with Additional Health-related Chapters

- 8.2.40. After reviewing the current standards and non-local building standards, it is suggested that an update on the non-statutory building standard could be implemented in the medium term. For

example, a revamp of the BEAM Plus standard could be done to improve the existing building design assessment tools regarding health. As a prerequisite of GFA concession, it is believed that the revamp of BEAM plus could encourage the private developers to incorporate more elements on their developments to give positive impacts to the human well-being.

- 8.2.41. First, regarding requirements that are already proposed in the existing BEAM Plus standard, a more comprehensive guideline could be developed to improve the building design. Taking lighting as an example, the existing BEAM Plus standard touches upon two major aspects — ‘artificial light’ and ‘daylight’. The numbers of artificial lighting provided indoors and the penetration rate of sunlight into buildings are stated (HKGBC, 2019). However, there is a lack of a holistic approach in evaluating the impact of building design on people’s health. Referencing to the WELL building standard, glare control, visual balance, daylight simulation are important elements bringing positive health outcomes. For example, glare control could reduce the negative impact brought by excessive glare by lighting. The WELL standard guideline also highlights the importance of controlling lighting by the users and the minimum requirements on the percentage of workstations that have access to natural light (IWBI, 2020). It is suggested that the authority could incorporate more details on the design of lighting into the existing standard as a refinement.
- 8.2.42. Furthermore, it is also suggested that the BEAM plus standard should explore more aspects regarding healthy building design. For instance, the existing standard barely considers the promotion of physical activities. To encourage the use of cycling, it is suggested that buildings should provide sufficient parking space and maintenance tools for bicycles. Also, the provision of fitness facilities in buildings should be included in the standards to promote physical activities. Regarding office development, one of the new guidelines that are suggested is providing natural assets such as water, plants or natural view to the indoor environments that is expected to improve mental health of workers. It is recommended that the above lacking requirements could be incorporated into the existing BEAM plus standard in order to promote healthy building design in Hong Kong.

Long-Term Action: Incorporate Healthy Building Standard into Statutory Documents

- 8.2.43. In the long term, it is suggested to further incorporate more health-related concepts into statutory documents such as the building practice notes published by the Building Department and also into the Building Ordinance.
- 8.2.44. A requirement on minimum flat size in residential development for giving GFA concession is recommended. Adequate living space is crucial to mental health, thus there is a need for the government to regulate the size of residential units to tackle the issue of inadequate living space in nano-flat. However, the minimum flat size standard goes against the trend of deficiency of housing supply. As the sizes of flats are required to be larger, it would reduce the number of flats provided in the same land area. In order to balance the housing supply and flat size, it is

recommended that the minimum requirement on flat size should not be mandatory. Instead, it could be included in the Building Department practice notes as a prerequisite of GFA concession. It aims to stabilise the housing supply and also maintain a basic standard of living space to a certain extent.

- 8.2.45. Apart from building practice notes, more health-related building standards should be incorporated into the legally binding documents such as the Building Ordinance. It is believed more concern should be given to healthy building design in the future and standards on building design should be raised. Therefore, some basic guidelines such as the greenery coverage and sunlight penetration rate which are provided in Beam Plus and the sustainable building design guideline are suggested to be shifted into Building Ordinance, regulating all development in Hong Kong to comply with healthy building design. Moreover, under the pandemic situation, the poor design of drainage systems are seen as a transmissive way of diseases. In view of this, the building department has published the latest standard “Enhanced Design Standards of Aboveground Drainage System” but it has no enforcement power. Therefore, it is suggested that the guidelines on the design of drainage systems should be included in the Building Ordinance to prevent the spread of transmissive diseases in future.

8.3. Empower Flexible Space Usage for Resilience, Emergency and Healthy Practices

- 8.3.1. Not only did the pandemic challenge the built environment’s resilience capacity and responsiveness in face of emergency, i.e. land allocation for quarantine centres or virus testing, but it also contested how robust and flexible the city’s urban fabric is in catering the new social demand, including but not limited to the emerging trend of work-from-anywhere and request for multifunctional outdoor spaces. The consultancy thereof proposes the second strategic direction: **Empower Flexible Space Usage for Resilience, Emergency and Healthy Practices**. The following strategic actions are tailor-made for empowering spaces with flexibility and resilience for social and economic aspects, integrating the new normal with strategic planning for optimising spatial potentials for health benefits.

Live-work Development Model

- 8.3.2. COVID-19 has proven that the home office is a viable working mode. The live-work development model as a mixed-use unit that serves both residential and office use should be advocated to enable proper development of home office units. The live-work development model aims to improve the home-job imbalance by reducing the demand for work trips. Bringing jobs next to homes saves time for people to pursue a healthier lifestyle and minimise the commute stress. The live-work development model would also retain the potential for commercial development with the new value of residential use, promoting smart growth with more efficient use of land. This action seeks to add to the strategic goal of bringing jobs closer to homes as mentioned in Hong Kong 2030+ through the diversification of housing options and decentralisation of

commercial spaces and commercial use functions in the land use scale in both urban areas and NDAs.

Current Effort in Promoting Mixed-Use Development

- 8.3.3. Under the current planning system, mixed-use development is allowed under Residential (A) land use, with the lowest 3 floors permitted with non-domestic uses, Commercial/Residential land use, which soon would be phased out by other land uses, Comprehensive Development Area (CDA), which requires the approval of Town Planning Board for development and mixed-use land uses, and Other Specified Uses (Mixed Uses), allowing flexibility of mixed-use in accordance to market need. Nonetheless, physical segregation of both vertical and horizontal mix of domestic and non-domestic uses is required to reduce the interface problem and the disturbance caused by non-domestic uses to residents.
- 8.3.4. The emergence of COVID-19 has reshaped our living and working style with the remote working and learning arrangement. Coupling with technological advancement, the workspace is becoming more liquid with a spectrum of flexible working space options (JLL, 2020b). Workspaces are no longer limited to traditional office towers, but are also shifting to a more flexible model of coworking membership, workspace on demand, and even work from home (See Figure 8-7). A flexible and hybrid working mode would be the future in the post-covid era. 66% of the workers in Hong Kong would opt for jobs with remote working options and that 53% are planning to move away from urban centres for a new way of life with remote working (Microsoft Hong Kong, 2021). In addition, 65% of the business leaders are converting their offices to cater to hybrid work and 62% acknowledge the hybrid work model allows businesses to thrive (Microsoft Hong Kong, 2021). It is seen that companies are shifting to the hybrid model to retain and attract talents. While primary offices are kept in the CBD with a reduced size, satellite offices are set up for decentralisation of offices and in support of the hybrid work model (China Daily, 2020).

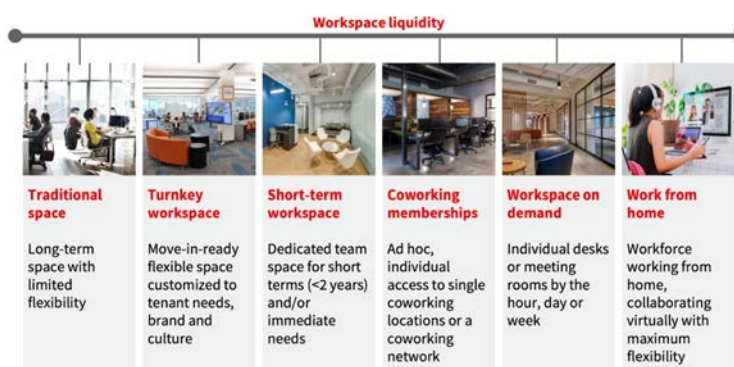


Figure 8-7: Workplace Liquidity

Source: JLL, 2020

- 8.3.5. Riding on the trend of flexible working, many of the consultancies foresee a decline in demand for office space and increasing demand for the flexible workspace (JLL, 2020b; Johnson, 2020),

which gives rise to the opportunity for embracing a more flexible use of land resources and reimagining a post-covid environment. The blurring boundary between the workspace and home has prompted the reconsideration of mixed-use development to accommodate living and working at the same time.

- 8.3.6. Highlighted in the Hong Kong 2030+, it is anticipated that there would be a surplus of 32 hectares of land for general business use, from the existing land stock and the redevelopment of industrial buildings, by 2041 (See Table 8-2). Combining with the decreasing demand for office workspaces, the surplus of land serves as the opportunity to take on the live-work development model. Utilising the surplus of land, the live-work development model could maximise the land potential in serving as both workspaces as well as a living unit, providing an alternative of working and housing options.

Long-Term Surplus or Shortfall (By 2041) after Deducting Major Planned/Committed/Under Advance Planning Supplies		
Grade A Office	CBD	Deficit: 8.9 ha (1.06M m ²)
	Non-CBD	Surplus: 10.5 ha (1.26M m ²)
General Business		Surplus: 32.3 ha (3.55M m²)

Table 8-2: Long-Term Commercial Land Supply After Deducting Major Planned/Committed/Under Advance Planning Supplies

Source: Planning Department Hong Kong, 2016a

- 8.3.7. An example of the live-work model in shared premises dimension through single-block development and large-scale redevelopment is the officetel model in Seoul. Entailing mixed office and residential use, officetel accounts for 2.4% of the housing in Seoul in 2010 (Gohaud and Baek, 2017). Locating on commercial land use, officetel offers flexible use of units to cater to the demand for both office and residential use in proximity to the city center. The residential units in officetel are denoted in the regulation as adjunct housing to the work equipment, which enables residential units to be located on land zoned for commercial uses. Laws and regulations are implemented to oversee and control the design of officetel, in safeguarding the safety and healthiness of the environment. While there are still controversies regarding the design and usage of the officetel, it remains a popular housing option for single-person households and an office choice for small and medium-sized companies, demanding small units with convenient transport.

Implementation of the Live-Work Development model in Hong Kong - OU(MU) as an enabler of the Live-Work development model

- 8.3.8. Mixed-use development is not a new idea in Hong Kong, with several land uses permitting a vertical mix of uses. To embrace the idea of a live-work development model, the existing zoning

of Other Specified Uses (Mixed Use) (OU(MU)) could serve as an enabler to promote the concept of shared premises. OU(MU) enables a certain degree of flexibility in terms of uses, allowing a combination of compatible uses as well as commercial and residential uses. Development in OU(MU) sites is subjected to the scrutiny of the Town Planning Board, with the consideration of land use compatibility, provision of infrastructure, facilities, and transport capacity (Town Planning Board, 2011).

- 8.3.9. Yet, physical segregation between domestic and non-domestic uses is currently required to minimise the disturbance caused to the residents. It is necessary to update the Town Planning Board guidelines to allow the mixing of use on the same floor space. Taking a lesson from the international experience, further regulations and guidelines should be established to regulate the live-work model design, including but not limited to the ratio of work and living spaces, fire safety requirements, and design of entry points, to ensure a healthy live-work environment and to manage the disturbances caused by non-domestic uses to other residents through exerting control on the business sizes and types of commercial activities.
- 8.3.10. The model is targeted to small and medium-sized enterprises with no location preferences and single- or two-person households adopting flexible working mode with businesses of the limited flow of visitors and minimal degree of nuisance. For example, the non-manufacturing SMEs in Hong Kong that have a business size of fewer than 50 employees are the targets (Trade and Industry Department Hong Kong, 2021). In addition, the criteria for the selection of suitable types of “work” is the compatibility of business use to residential use, therefore business allowed should be limited to non-manufacturing and non-polluting businesses and businesses that do not have daily visitors. Possible uses concerning the categorisation of the Town Planning Board (2018) include but not limited to Art Studio, Creative Industries, Information Technology and Telecommunications Industries, and Office (other than those involving direct provision of customer services or goods) offering professional and financial services. It is important to note that the live-work model seeks to offer an alternative housing option in catering to the needs for a quality home office environment brought by the shifting work mode.

Short-Term Action: Pilot Scheme in Revitalising Industrial Buildings to Provide Live-Work Model

- 8.3.11. Riding on the existing policy of revitalising industrial buildings, the live-work model could be tested out with the rezoning of industrial land use to OU(MU) as a pilot scheme in testing the feasibility and marketability of the model. Existing measures on industrial revitalisation are implemented to facilitate the wholesale conversion and redevelopment of industrial buildings, such as the exemption of waiver fees and relaxation of plot ratio. Transitional housing has also been encouraged in industrial buildings located in commercial, other specified Use (Business), and industrial land use (Lands Department Hong Kong, 2019). OU(MU) land use could serve as an alternative to the existing land use option to facilitate the restructuring of the industrial area in catering to the demand for both business operation and housing while minimising the needs for additional transportation infrastructure.



Figure 8-10: Undesignated Other Specified Uses in Hung Shui Kiu NDA
 Source: Civil Engineering and Development Department and Planning Department Hong Kong, 2017



Figure 8-11: OU(MU) in Yuen Long South NDA
 Source: Civil Engineering and Development Department and Planning Department Hong Kong, 2018

Urban Overlay

8.3.16. The Urban Overlay, which is composed of three layers ranging from short term to long term, is inspired by tactical urbanism, which is an advocacy emerged in 2010, for planners to initiate short term commitment as a first step towards long term changes, which is of lower risks with potentially high rewards (Arup, 2020). Fitting into the context of healthy city planning, research shows that through boosting the changeability and adaptiveness of the built environment, healthy spatial elements and emergency planning can be integrated into existing buildings and future development (Arup, 2021). Consequently, citizens’ quality of life and city’s response capability can be reinforced even when the next pandemic hits (Moraci and Errigo, 2020). In view of these, the Urban Overlay, integrating the essence of resilience planning derived from Hong Kong 2030+, is a vital strategy aiming to reinforce citizens’ health.

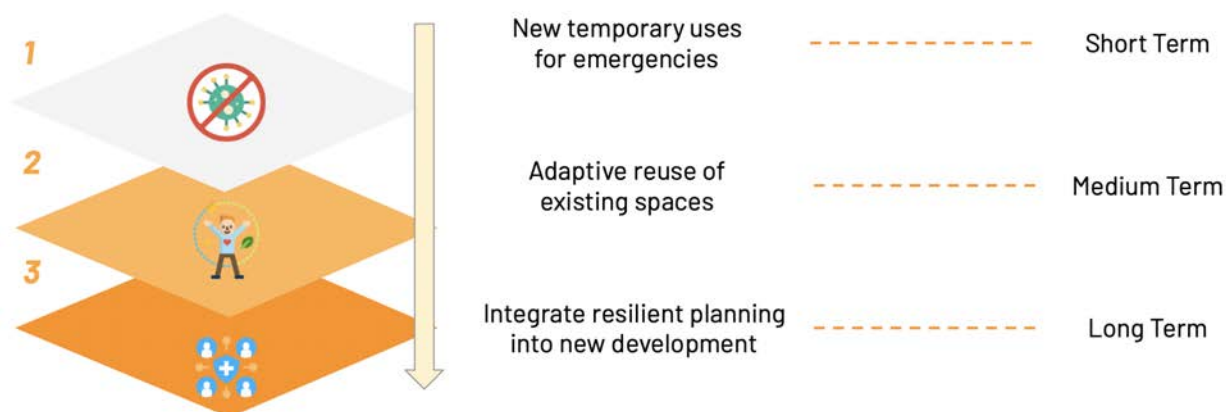


Figure 8-12: The Structure of Urban Overlay
Source: PlanGen, 2021

Current Effort in Strengthening Resilience

8.3.17. Hong Kong 2030+ provides inspiring insights regarding the qualities of building a resilient city, which are shown in the Table 8-3. These qualities serve as a fundamental foundation for the formulation of strategic actions in planning for a resilient.

Flexible and Reflective	Evolving mechanism that can adapt to ever-changing circumstances.
Robust	The system should be well-constructed to withstand a hazard event without significant damage.
Redundant	The spare capacity within a system for accommodation of pressures or disruption when necessary.
Resourceful	People and institutions are aware of the various ways to meet their needs during a hazardous event.
Inclusive	Ensure the most vulnerable groups are included by virtues of broad consultation and engagement.
Integrated	Various systems within a city should be consistent in decision making and are mutually supportive to each other.

Table 8-3: Qualities of Building a Resilient City
Source: The Rockefeller Foundation & Arup (2015) quoted by Hong Kong 2030+

8.3.18. Hong Kong 2030+ has put a tremendous emphasis on climatic resilience as illustrated by the City Resilience Initiatives. In face of extreme climate conditions, Hong Kong 2030+ highlights the collaborative efforts of government departments in implementing flooding and landslides

preventive measures and emergency management. Concomitantly, the promulgation of the Sustainable Building Design Guidelines and the Urban Climate Map as strategic guidelines to identify climatically vulnerable areas, collectively boost Hong Kong's climatic resilience in alleviating the urban heat island effects.

- 8.3.19. Indeed, the current pandemic challenges the city's emergency response and shock-withstand capacity. The government should further take such changing context into the account of resilience planning in the health domain. It is particularly vital to optimise the built environment preparedness for unanticipated catastrophic events, as well as to equip the citizens with knowledge to utilise the spatial and smart tools for safeguarding their health. The following strategic actions adopts an asset-based approach to take step forward to reinforce resilience and achieve the two aforementioned aims.

Short-Term Action: Layer 1 — New Temporary Uses for Emergencies

- 8.3.20. The first layer of the Urban Overlay focuses on flexibility and reversibility, which is to search for new land for temporary usage in times of emergencies. Indeed, this is not completely new since the government constructed the North Lantau Hospital Hong Kong Infection Control Centre as a temporary hospital (GovHK, 2021). However, this approach is rather demand-driven. Instead, it is suggested that the government adopt an asset-based approach to develop a comprehensive database to identify land specially suitable for temporary emergency uses, possibly a collection of short term tenancy land.
- 8.3.21. While this can minimise the time costs of land search during urgent circumstances like the outbreak of virus, establishing efficient construction technologies can further strengthen Hong Kong's resilience. For instance, the modular integrated construction (MiC) method enables prefabrication of building components to fast track the development process, reduce labour costs and better risk control through modelling (Arup, 2021). Currently in Hong Kong, the projects which were constructed by MiC are less than 20 (Construction Industry Council, 2020). Still, the ongoing construction of the quarantine camp in Penny's Bay manifested the possibilities of using MiC as a development tool to reinforce emergency preparedness. It is recommended that the government should invest more in research and training for innovative and efficient construction technologies, and even step up in search for sustainable building methods with less environmental impact with reusable materials.
- 8.3.22. Furthermore, such temporary, accelerated emergency planning can even extend to the community context for greater social impacts. Shanghai and Barcelona are good examples of reimagining post-COVID healthy lifestyle through partnership, that the government engaged the civil society for cutting-edge local urban strategies, organised competitions and pitching for architects and planners to submit proposals for healthy city planning, creating synergies in the neighbourhood context (ArchDaily, 2020).

Medium-Term Action: Layer 2 — Adaptive Reuse of Existing Spaces

- 8.3.23. The second layer of the Urban Overlay is the adaptive reuse of existing underutilised spaces. When facing catastrophe, architecture must offer immediate and effective solutions (ArchDaily, 2020). A flexible design tactic is recently advocated by architects and planners, which is called “Urban Acupuncture” to regenerate underutilised community spaces and consolidate social infrastructure. An alternative to the conventional planning process, the planning tactic circumscribes public spaces with a high degree of reversibility through modest means (ArchDaily, 2020). For instance, the “Super Block” pedestrianisation strategy, which aims to minimise traffic pollution and promote walkability, was first implemented by Barcelona using inexpensive and reversible means, serving as an experimental approach for further consolidation and implementing the project iteratively in future (ArchDaily, 2020).
- 8.3.24. Another good example is from Shanghai. During the epidemic, an underutilised parking lot was transformed to a public garden for outdoor dining, mini-lecture space and open theatre (ArchDaily, 2020). The adaptive reuse strategy empowers the locals to carry on their everyday lives in an outdoor setting while respecting new social distancing norms. Their social well-being can be enhanced without feeling isolated in pandemic times.
- 8.3.25. It is suggested that the government could partner with various stakeholders to fast-track and implement urban strategies which are fast to deploy, temporary and at low costs to bring transformative social impacts. COVID-19 has brought notorious impacts to business operations. Many facilities were temporarily closed. Under such circumstances, the government could initiate partnerships with schools, hotels, cinemas or any stakeholders to fully optimise the functionality of urban spaces in different times. On one hand, economic viability can be sustained. On the other hand, underused private resources can be mobilised and channeled for catering the new social demand and making health benefits. For example, vacant hotel rooms could become co-working space to cater for the new work-from-anywhere trend; cinemas could become health education centres; schools’ playgrounds can be transformed to virus testing centres if there is suspension of schooling, or even outdoor pop-up fresh food markets on weekends when pandemic eases. Challenges can be turned into opportunities to better utilise existing facilities at different times and situations.

Long-Term Action: Layer 3 — Integrating Resilience Planning in New Development Areas

- 8.3.26. The last layer would be integrating emergency planning and healthy components into New Development Areas (NDA), ranging from the East Lantau Metropolis to the Kwu Tung North Fanling North NDA. Aiming to establish a comprehensive infrastructure and logistic network to ensure necessities can be delivered effectively even during emergencies, spatial configuration of the NDAs should be designated to support emergency plans. For instance, reaching for pre-agreements of which buildings or spaces would be converted to quarantine centres or virus testing areas when the next pandemic hits. It is understandable that resistance against planning

decisions cannot be completely eliminated, yet the government should educate and engage the stakeholders as much as possible regarding how resilience can be reinforced with such planning strategies, as well as how the public can be benefited from that.

- 8.3.27. This strategic action could also create synergies together with the Health Impact Assessment to stimulate the developers to explore how resilient and healthy the sites can be. For instance, scenario testing for what if the neighbourhood is subjected to a lockdown and how each building reacts with changeability and adaptiveness for self-sufficient operation. It is suggested that the better the developer can present the emergency planning of the development, the higher the chance for them to win the tender and obtain planning approval.

Potential Challenges and Mitigations

- 8.3.28. Investing in new building technologies, land search databases, civil society engagement, further rules setting for large-scale development require enormous workload. Nevertheless, these strategies can actually reduce ex-ante transaction costs in urgent situations, like uncertainties for land selection and construction. Early agreement with stakeholders for emergency planning and consolidation of clear rules further safeguards development outcomes with resilience. Engaging the civil society for healthy planning practices helps to translate policy advocacy to the public, thus reducing possibilities of mismatch of locals' needs and shortens negotiation process if there is opposition from locals.

8.4. Transform Spaces for Customised Active Mobility

- 8.4.1. As mentioned, supporting infrastructure for active mobility still has room for improvement and people-oriented public spaces are important for public health purposes. The pandemic has brought the importance of active mobility as commuting means to discussion again, as illustrated by previous examples in foreign nations. Thus, the consultancy proposes the third strategic direction: **Transform Spaces for Customised Active Mobility**. We are dedicated to providing opportunities to convert spaces, no matter existing streets or neglected spaces in the community, into spaces enabling active mobility, while allowing customised experiences driven by local community needs and technological synchronisation.

Transform Street as Spaces for Neighbourhood

- 8.4.2. Walkable streets that are people-oriented should embrace not only principles such as easy wayfinding and a safe walking environment, but also the character of the streets being public spaces that belong to all. Streets should cater for not only the 'link' function, but also the 'place' function, which refer to streets as a medium for transport and as a destination where people spend time staying on streets for diverse recreational and socialising activities (Jones and Boujenko, 2009).

- 8.4.3. Thus, this strategy is recommended to appreciate the place functions of streets, valuing streets as an attractive destination and also important public space for people to use for socialising and other non-transport purposes, catering for the diverse dimensions of walkability to shape Hong Kong as a healthy city with active mobility as an important chain of the transport system.
- 8.4.4. This strategy aims at first conceptualising the current functions of different streets and enhancing the place functions of streets while reorienting streets as multipurpose spaces. It would be resolving the existing conflicts in the serving functions of streets, offering leisure and social spaces for all, especially prioritising pedestrians over vehicular traffic, through an integrated manner. It also aims at providing public spaces on streets in proximity to points of interests, enhancing street functions at the neighbourhood level. It strives to incorporate 'preventive healthcare' concept in place-making, transforming streets as prioritised spaces for people to walk and perform exercises. Ultimately, through the improved streetscape, we endeavor to improve overall walkability of streets and connect people to diverse open spaces which further encourage active lifestyle.

Current Effort on Walkability and Active Mobility

- 8.4.5. Meanwhile in Hong Kong, there has been a disproportionately heavy emphasis on the "link" function, rather, the discussion of the streets as a "place" is relatively inadequate. Street facilities and arrangements are very often dedicated to support the primary function of the street as a transport medium. However, streets can serve dual and multiple functions and can elicit the "link" and "place" functions to different extents across time, depending on where the streets are located (Civic Exchange, 2016). Due to the enormous volumes of foot traffic reaching over 10,000 people per hour for some major streets, the link and place functions of streets can compete with each other especially in streets with narrow pavements and enormous pedestrian flows, leading to deterioration in the functionality and quality of streets.
- 8.4.6. Apart from focusing on the link-place dynamics, there are also four major aspects of walkability which require collective improvements (Civic Exchange, 2016). First, streets should be 'possible to walk', meaning there is a requisite level of pedestrian facilities and conditions necessary for everyone to be able to walk. Second, streets should be 'efficient to walk', acquiring the conditions required to proceed from origin to destination with efficiency and ease. Third, streets should be 'comfortable to walk', equipping them with qualities for pedestrians to feel comfortable and at ease. Fourth, streets should be interesting to walk, attracting people to stay in the space and use it for recreational and social activities.
- 8.4.7. In the wake of an active and healthy lifestyle, Healthy Streets Approach is adopted by London. It stipulates a long-term plan for improvements to street experiences and engagement of everyone in becoming more active by staying on streets. As summarised in Figure 8-13, 10 Healthy Streets Indicators are holistically formulating an overall Healthy Street for all. Such Approach has been implemented on various hierarchies, including street, network and policy

levels, on which measures complement each other. On the strategic policy level, improvement to the connections between major destinations and public transport is emphasised as to accommodate important amenities within walking and cycling distances.

- 8.4.8. On the network level, it plans and manages London’s street network on a large scale. It tackles the extent and reliability of public transport systems that reduce car usage, manages roadside air quality, manage roadworks, and implement street safety measures including traffic light and on-street operations enhancements, so as to create an appealing street environment that is favourable for active mobility.
- 8.4.9. On the street level, it advocates for positive changes to streets’ distinctive characters. Adequate spaces for dwelling, walking, cycling, public transport uses and other possible permitted uses are promoted. Passers-by can be then attracted through enhancements to features on streets, including seating facilities, shading, greenery coverage, and reduction of vehicle-prioritised facilities and vehicles. With the above planning actions, they enable occasional or regular closure of streets for people to dwell on streets with streets as large public spaces (Transport for London, 2017). With the holistic effort at various levels and scales, the concept is put forward to improve street experiences and encourage active mobility.



Figure 8-13: Healthy Streets Indicators and Photo for Demonstration
 Source: Living Streets, 2020

Current Practices of Pedestrianised Plans

- 8.4.10. At present, there are already a number of car-free streets as proposed and implemented in various areas, such as Causeway Bay, Tsuen Wan and Tai Po, etc. (Transport Department Hong Kong, 2021). However, those pedestrianised streets, whether or not part-time or full-time pedestrianised, are primarily transport driven and not entirely community driven. They are close

to vehicular traffic mainly because of the pre-assessed high pedestrian volume, but most of them are not public spaces comfortable and interesting for lingering and enjoyment (Shaw, 2018). Also, vehicular traffic was once abandoned in Sai Yeung Choi Street during weekends and in evenings, catering for lively interactions and performances. However, with an insufficiently holistic street management mechanism that is responsible for managing street events and furniture, and inadequate related legislations, the Street became homes to touts for mobile phone and internet services and massive pay-to-play karaoke booths, etc., which induced nuisances to nearby residents and passers-by (Dewolf, 2020). With pressure revolted by residents, the pedestrianisation scheme ceased with values for reflecting cruciality for future execution.



Figure 8-14: Fully Pedestrianised Street in Causeway Bay

Source: Film Services Office, 2020



Figure 8-15: Clusters of Noisy Performances occupied Pedestrian Spaces in Mong Kok

Source: The Standard, 2018

8.4.11. Admittedly, the existing pedestrianised streets designated for transport purposes can also lead to a healthy lifestyle by allowing for walking. However, it is essential to further strengthen related pedestrian-prioritised measures and the respective streetscape that can contribute to walkability, so as to further encourage active mobility as well as allow diverse outdoor activities to be carried out.

8.4.12. Besides, apart from the executed pedestrianisation plans, there are also proposals which advocate for enhancements. The Walk DVRC Initiative has been advocating for the revitalisation of Des Voeux Road Central between Pedder Street and Western Market. It envisages a fairer sharing of space between vehicles and pedestrians in this Central Business District, with tramway and one eastbound vehicle lane preserved while giving way of the rest of the road space to pedestrians. This is proposed to develop a community improvement zone that promotes inclusiveness to the public who have different needs. The Initiative also proposes staging the Sheung Wan Fiesta which showcases local gastronomy and cultural elements in the pedestrianised zone and lasts for 90 days (Walk DVRC Ltd., 2021).



Figure 8-16: Photo Montage showing the Concept of Sheung Wan Fiesta
Source: Walk DVRC Ltd., 2018

- 8.4.13. Nevertheless, such trial schemes receive enormous amounts of complaints regarding the pressure on the road traffic system and disturbance to nearby businesses, failing to gain approval in the district council. Also, the fundamental problem of traffic management remains unsolvable while the Transport Department has continuously requested for Traffic Impact Assessment and other transport surveys, as a means to reassure minimal traffic impact would be induced on this major primary road at the heart of Hong Kong Island (Ockenden, 2020). Thus, the Walk DVRC Initiative is still not viable given its traffic management and street management issues.
- 8.4.14. In light of the problems identified and the reflection from existing conditions, our team endeavours to propose an implementation plan that leads to gradual improvement in street public space planning.

Short-Term Action: Enhance Security and Comfortability-based Pedestrian Facilities

- 8.4.15. In the short term, there should be prompt smart actions in enhancing the security and comfortability of pedestrianised prioritised facilities. Some elements such as traffic calming measures, management of roadside air quality and development of greenery and shade along the streets have already been put forward in improving streetscape in Hong Kong in current plans. However, it is particularly essential to cater for the safety and comfortability of streets in order to prepare them as spaces for all. There should be identification of spots where lightings are dim that induce serious vehicular-pedestrian conflicts, where resting facilities are insufficient within comfortable walking distance, and where overall pedestrian-prioritised measures and continuous streetscape improvement can be implemented. Lighting improvements can be prioritised in areas with higher vulnerability to safety issues, i.e. higher rates of crimes and accidents. These enhancements altogether alleviate the serious pedestrian-vehicular and pedestrian-cyclist conflicts and promote comfortability of dwelling and staying on street spaces.



Figure 8-17: Functional Benches at Hung Luen Road
Source: Escofet, 2017

Medium-Term Action: Develop Convertible Streets

- 8.4.16. After laying the foundation for transforming streets as public space, our team proposes to develop smart convertible streets in order to enhance the ‘place’ function of streets and convert streets into multipurpose spaces accommodating walking, business and socialising activities. Streets with potentials for regular closure at designated times or permanent closures to motorised traffic would first be identified. Technology can facilitate the process by computing the link-place functions matrix of individual streets to identify streets which can balance the link-place functions for potential conversion.
- 8.4.17. In terms of criteria setting for streets which can potentially be pedestrianised, especially permanently pedestrianised, those streets would be having initially hindered pedestrian movements, intense pedestrian-vehicular and pedestrian-cyclist conflicts, minimal resting points within comfortable walking distance, and most importantly, their traffic capacity can be accommodated and compensated by other roads after traffic diversion, in order to cater for the indispensable traffic management problem elicited in the Walk DVRC Initiative that obstructs the implementation of that proposal.
- 8.4.18. It is important to note that our proposal for the pedestrianisation scheme covers not only pedestrianisation, but also traffic management and street management as the three keys of our scheme, as inspired by the reflection based on previous attempts. The three keys are inter-connected and would together form a holistic approach. On top of these foundations of the proposal, our team proposes programming which fosters neighbourhood experience and planning for the community, with the dedication of district-based themes in different pedestrianisation areas.
- 8.4.19. Here we take the example from Shau Kei Wan Main Street East – the busiest Street in Shau Kei Wan, which is preoccupied by roadside parking especially driven by visitors during weekends, but having pedestrians concentrating on the narrow pavements while they get access to numerous restaurants and grocery stores. There have been minimal pedestrian crossing facilities

and vehicles also need to drive slowly due to the enormous roadside parking for getting access to the shops along the Street.

- 8.4.20. Thus, we propose taking it as an example to demonstrate. It can be pedestrianised with the extended sections of restaurants selling local and foreign food and the promotion of temples and worshipping culture in the area, which suit the local contexts. Also, it does not cater to public transport so the traffic diversion of private vehicles can be viable. However, in terms of street management, the loading and unloading events would require a substituting location, maybe at Mong Lung Street, or they are only allowed at certain times if not fully pedestrianised, viability of street management measures are upon detailed and further assessments. We understand that this may not be a perfect prototype for our scheme, but it is used to demonstrate the way of thinking into developing a better mode of pedestrianisation scheme.



Figure 8-18 & 8-19: Existing Conditions on Shau Kei Wan Main Street East and Proposed Pedestrianisation Scheme to Shau Kei Wan Main Street East

Source: Google Maps, 2021; PlanGen, 2021

Long-Term Action: Connect Different Open Spaces

- 8.4.21. Upon catering for streetscape improvements and potential convertible streets, ultimately our team proposes to connect different open spaces in the surrounding areas, attracting people to practice active lifestyles along their way to the open spaces and within the open spaces. When people are attracted to their neighbouring open space, they would then be encouraged to visit other open spaces across nearby districts.
- 8.4.22. As an illustration, we propose to develop the concept of open space loop across Admiralty, Wan Chai and Causeway Bay, connecting open spaces such as Hong Kong Park, Tamar Park and Victoria Park through specific and comprehensive streetscape improvements as well as exploration of the potential of pedestrianising certain pathways within the loop.

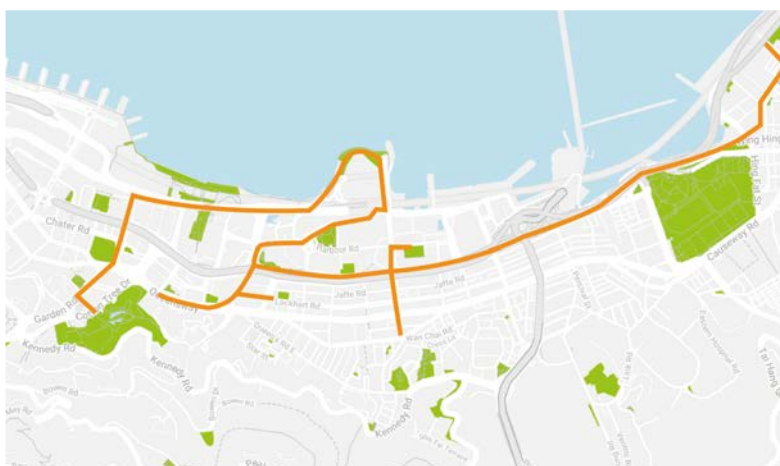


Figure 8-20: Open Space Loop Across Admiralty, Wan Chai and Causeway Bay as Demonstration

Source: PlanGen, 2021

Extend and Improve Existing Infrastructure and Reinvent Alternative Routes for Active Mobility

- 8.4.23. Under the pandemic, there is a growing demand on the infrastructure related to active mobility around the globe. Many people shift towards active mobility due to existing social distancing requirements, and in turn create healthier lifestyles among themselves. As a response to this changing context, many cities have taken proactive actions to shift to active mobility by enhancing relevant infrastructure.
- 8.4.24. Most of the city governments, i.e. Paris, London, Singapore and Shenzhen, are currently using smart data platforms, advanced network analysis tools, and IoT to plan and develop active mobility infrastructure. These technologies significantly improve user experience, enhance the safety, and improve the efficiency of allocating these infrastructure.
- 8.4.25. Based on the issues discussed at the beginning of this section and problem identification, this strategy is proposed to further enhance the strategies proposed in Hong Kong 2030+ concerning the promotion of active mobility. The consultant proposes to increase the provision of high-quality infrastructure and supporting facilities accessible to all social groups to promote walking and cycling within their neighbourhoods.
- 8.4.26. The foundation is to develop high-quality well-connected networks of infrastructure, which includes pedestrian pathways, cycling tracks and other supporting facilities, with the support of mobile applications for healthy routing. Therefore, this action proposes two branches supplementing the previous action.

Short-Term Action: Extend and Improve Facilities and Connectivity of Cycling Networks

- 8.4.27. According to a cycling study conducted by Atkins for the Transport Department of Hong Kong in 2002, it has identified suitable areas for cycling in Hong Kong in both new territories and the old

urban areas (See Figure 8-21). As mentioned, the existing and proposed cycling tracks and supporting facilities are mainly concentrated in the new territory areas as support to recreational cycling. Therefore, we propose to extend the existing cycling network in urban areas and the future development areas (See Figure 8-22).

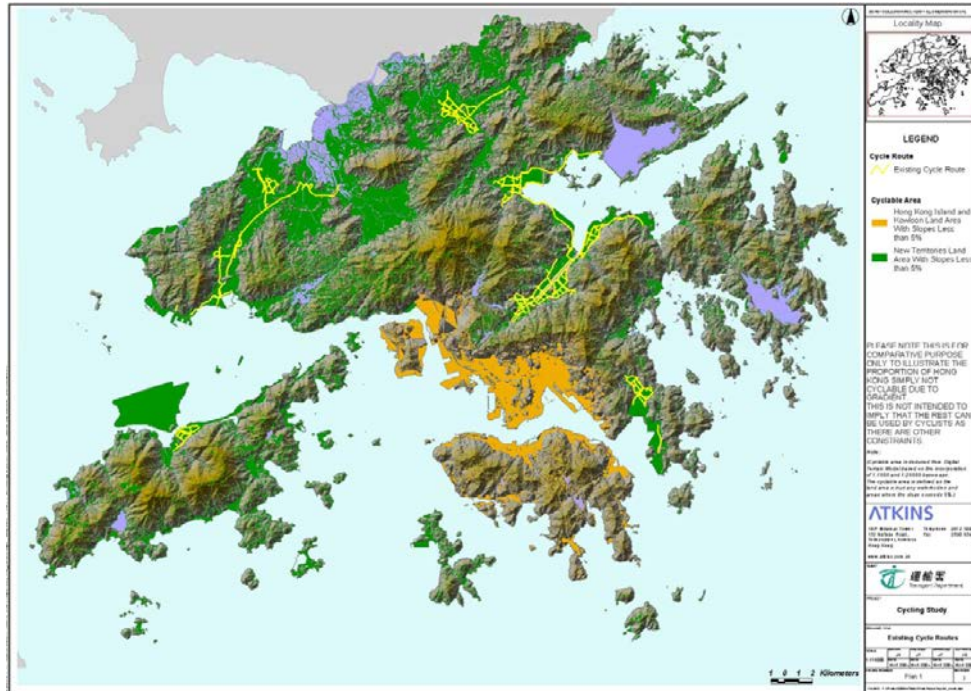


Figure 8-21: Suitable Areas for Cycling
Source: Atkins, 2002

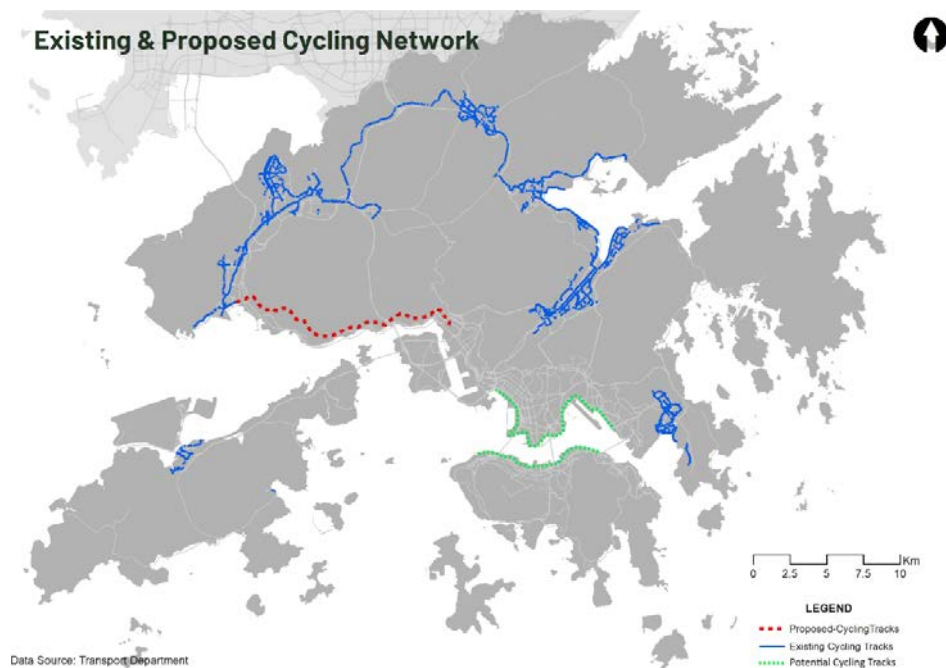


Figure 8-22: Existing Cycling Tracks in Hong Kong
Source: Transport Department Hong Kong, 2020 & PlanGen, 2021

8.4.28. One of the main challenges to promote cycling in Hong Kong identified in previous studies is the safety of the cyclists (Atkins, 2002). According to the above report, most of the casualties to cyclists had happened in urban areas in Hong Kong Island and Kowloon areas. However, the following international examples shows that the safety of the cyclists can be greatly enhanced by the integration of technology and adopting innovative approaches to promote cycling. Therefore, we propose to enhance the safety features of existing cycling tracks using following international cases as examples (See Figure 8-23).

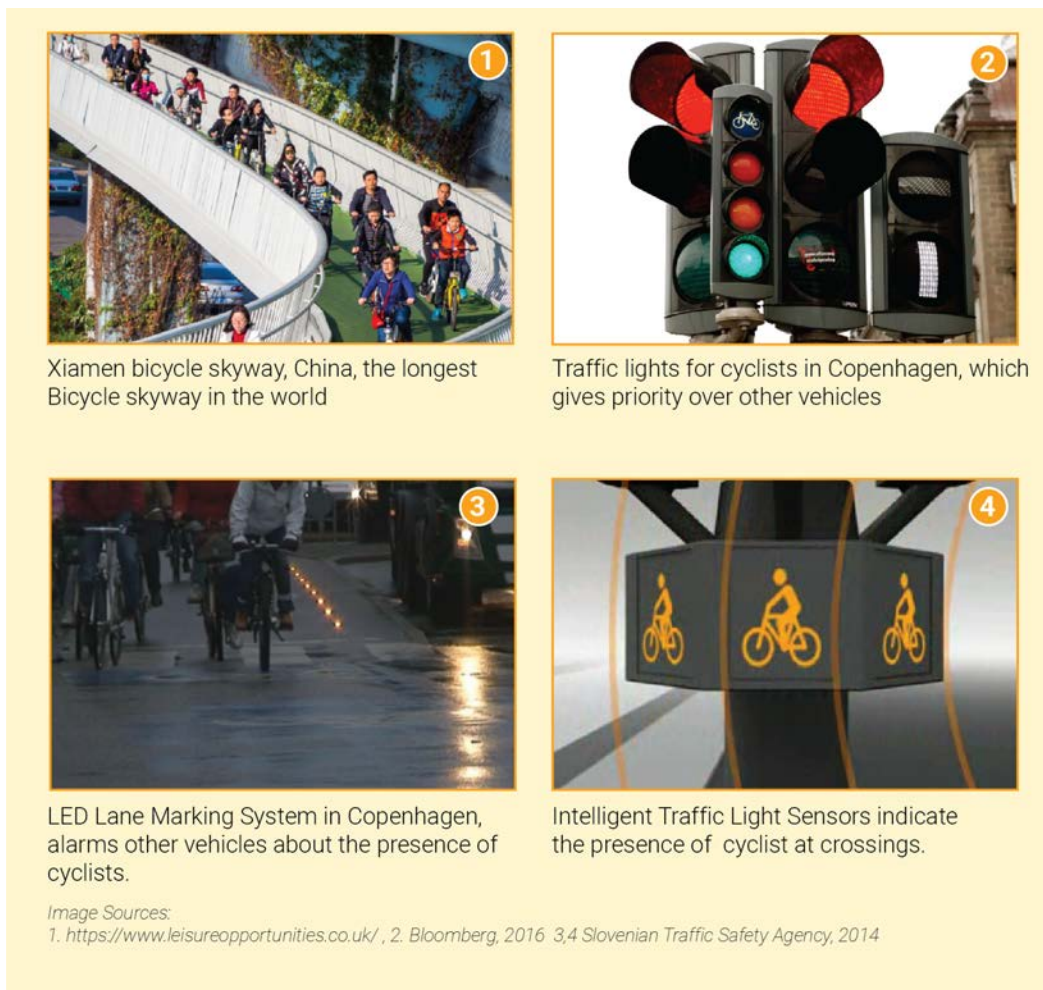


Figure 8-23: International Best Practices Related to Improving Safety of Cyclists

Source: PlanGen, 2021

8.4.29. Also, other facilities need to be improved related to cycling tracks. These may include, bike sharing facilities at MTR stations, adequate and safe cycling parking spaces, shower cubicles, locker facilities, cycling pumps, repair stations, other ancillary facilities, etc. for international examples of similar facilities (See Figure 8-24). Therefore, we propose to assess the existing ancillary facilities related to cycling in existing locations and develop those facilities as a short term and medium term measure to promote cycling in Hong Kong.

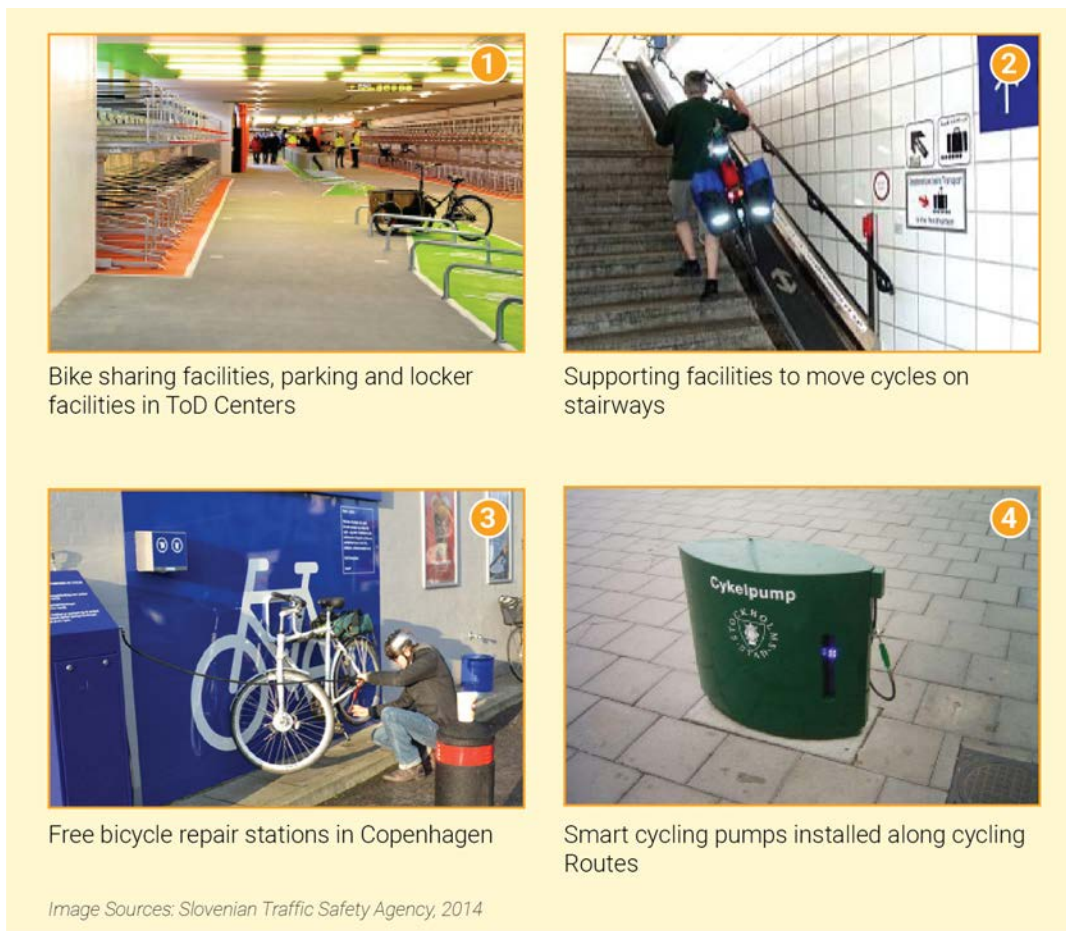


Figure 8-24: International Best Practices Related to ancillary facilities

Source: PlanGen, 2021

8.4.30. We also propose the development of master planned cycling networks in the future development areas to overcome existing issues related to conflict between vehicular roads and cycling tracks.

Medium & Long-Term Action: Reinvent Alternative Routes and Personalised Healthy Smart Routing

8.4.31. Hong Kong utilises a lot of smart navigation systems through various applications including Google Maps and City Mapper, etc. Apart from the navigation data, various real time location-based information can be shared among different platforms on various thematic aspects relating to health, such as air pollution index, traffic, weather and types of restaurants along the route, etc. However, due to the closely knitted high-rise developments and underground pedestrian circulation networks, there are considerable extent of GPS blind spots which hinder the use of above applications. At the same time, the existing 2D navigation systems are unable to locate routes in the 3D space.

8.4.32. Thus, we propose an integrated 3D navigation system which can be used in both indoor and outdoor vertical spaces. It can be potentially linked with individual health preferences, environmental data, and other health-related indicators (See Figure 8-25). This information

currently available in different silos can be potentially integrated into one platform through this smart navigation system to suggest personalised healthy routes with the choices of various health-related elements. For instance, the proposed application can suggest separate routes for Asthma patients by analysing air pollution level at the street level.

- 8.4.33. This proposed application can be used to promote hidden multi-layered pedestrian circulation pathways based on existing and enhancements to 3D pedestrian network data in Hong Kong, i.e. back alleys, podium levels, and unpopular overhead pedestrian circulation networks and thereby improve the active mobility, and suggest personalised healthy routing based on personal constraints and global constraints. It unleashes the potential of hidden vertical spaces within the city by providing vertical and horizontal navigation within buildings. The data generated through this strategy can be used to optimise the use of vertical spaces and identify strategic overhead and underground pedestrian linkages in the long run.
- 8.4.34. It is also proposed to integrate the above application with the existing data platforms related to individual's health records, environmental quality, congestion data, i.e. e-Health, to promote healthy routing. By creating multiple access points or platforms using AR/VR and voice navigation systems, it is aimed to make streets and spaces accessible for all groups of people. Through tracking physical activity of users and creating operational mechanisms, incentives are provided to people to engage in physical activities.
- 8.4.35. This proposal shall be considered as a part of overall active mobility improvement strategy. Digital divide can be identified as a challenge to develop the above proposal and sufficient participatory measures shall be taken during the design stage for co-design of solutions to meet the needs of all.

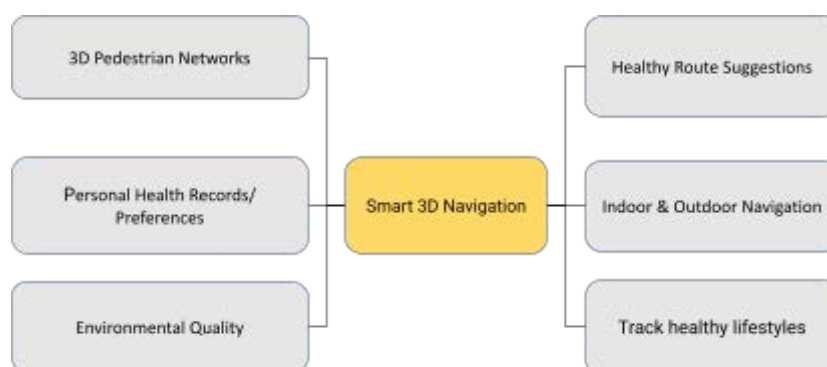


Figure 8-25: Proposed Smart 3D Navigation System

Source: PlanGen, 2021

Potential Challenges and Mitigations

- 8.4.36. The issues related to previous initiatives to promote cycling in Hong Kong need to be carefully studied during the implementation of this strategy and sufficient measures shall be taken to overcome those challenges. Undulated terrain is considered as a challenge in promoting cycling

in hilly areas in Hong Kong. It brings inconvenience and difficulty to inexperienced recreational cyclists who would like to shift to cycling for daily commuting trips. On top of that, technological or infrastructural supports can be integrated to overcome these issues, for instance, by enabling the use of e-bikes and hybrid bikes as well as enhancing the coverage of hillside elevators. Identification of areas facing particular elevation challenges would be essential. Relating to vandalism of assets, asset tracking systems and improved security systems can be introduced.

- 8.4.37. In addition, extending cycling networks in urban areas encounters serious conflicts in relation to competition for space with vehicular traffic. In order to alleviate this potential conflict in the urban area with particularly high vehicular traffic demands, cycling pathways shall only be positioned in roads with relatively lower vehicular traffic importance, instead of directly placing cycling tracks in important roads.

8.5. Enhance Open Space to Stimulate Active Lifestyle

- 8.5.1. Planning for a healthy city in Hong Kong, the consultancy has suggested the fourth strategic direction: **Enhancing Open Space for Stimulation Active Lifestyle**. The Consultancy shares a thought that more opportunities for healthy community activities can be promoted in the current open spaces. Based on the primary findings and observation, it is argued that by utilising open spaces in the society, more can be done to stimulate active lifestyle, to diversify recreational facilities and landscape, and to promote community farming.
- 8.5.2. To achieve the mentioned strategic planning direction, the Consultancy recommended two strategic actions as below. They are the enhancement of recreational and community farming, as well as the promotion of participatory design of community spaces. This chapter illustrates the above mentioned suggestions.

Community Farming in Hong Kong

- 8.5.3. The Consultancy proposes community farming with three aims: providing diversified green and open spaces in local communities, strengthening active mobility, and ensuring high quality and healthy living environments. In terms of diversifying green and open spaces, the Consultancy suggests setting up farms or gardens in communities, which acts as the nearest green space in the neighborhood. Plants and crops planted by the community members diversify greeneries in the community. More than that, the Consultancy also aims at strengthening active mobility with the promotion of community farms, which could encourage residents visiting green spaces in their neighbourhood. Actions can be taken in later stages to further promote active mobility. Moreover, in accordance with Sempik (2010), farming activities in the community facilitates one's mental and social well-being. As a result, the Consultancy are convinced that community farming can provide more greeneries to enhance community members' mental wellbeing, as well as promote social cohesiveness by encouraging more interaction between community

members. In short, the Consultancy suggested the promotion of community farming with the above three mentioned aims.

Current Effort in Local Community Farming

- 8.5.4. In light of the development of community farming in society, there are currently community gardens under the Leisure and Cultural Services Department parks in each district across Hong Kong. However, the total number of planting pots are, surprisingly, less than 1,000 (Leisure and Cultural Services Department Hong Kong, 2020c). A strong contrast has been demonstrated, because of the huge demand by the public, in which applicants are usually required to go through a “lucky draw” process to gain a place to plant in the community. Given the limited space for community farming and the high demand by the public, the Leisure and Cultural Services Department sets a 4-month planting period for each applicant (Leisure and Cultural Services Department Hong Kong, 2020a). Applicants are required to clear their crops 4-month after their planting activities commenced. This, as a result, has created difficulties towards the community farmers in planting with continuity and sustainability. Plants are also less diversified because of the shortage of time given.



Figure 8-26: Empty Planting Pots after Clearance of Crops
Source: PlanGen, 2021

- 8.5.5. Hence, the Consultancy promotes a sustainable and continual community farming in the following ways, which aims at overcoming the shortcomings of the current related scheme. In order to suggest a holistic and sustainable community farming, the Consultancy have proposed both short-term and mid-term actions.

Short-Term Action: Converting Planters in Public Rental Housing into Community Garden

- 8.5.6. Public housing estates are located in most districts across the city. In accordance with the Hong Kong Housing Authority (2020), 20% of the areas within public housing estates are specifically classified as planting areas. The planting areas are currently under the management of the authority (See Figure 8-27). The Consultancy, hereby, suggested converting the planting areas in housing estates into edible spaces, which allows residents and community members to grow their crops and plants. The Consultancy are also convinced that by utilising the existing resources within public housing estates, not only can this promote active mobility of community

members, but also engage the residents in designing and growing landscapes of their own neighborhoods with diversity of crops.

- 8.5.7. In regard to the proposed strategic action, the case in Tin Yuet Estate has shown a clear illustration. The Housing Authority agreed to temporarily turn the planters in the estate area into Herbal Garden and Community Garden, to promote community farming in the estate (See Figure 8-28). Later, a planting team was formed by the residents and there has been the expansion of team size. The responsible leader of the planting team revealed that not only does this garden stimulate interactions between community members, but it also fully optimises the existing landscaping resources by bringing another function of food production to the landscape. Hence, the Consultancy are convinced by the effectiveness of the scheme.



Figure 8-27: Greening Area in Un Chau Estate
Source: Hong Kong Housing Authority, 2020



Figure 8-28: Community Garden in Tin Yuet Estate
Source: HK01, 2016

Short-Term Action: Utilising Rooftop Area of GIC Building

- 8.5.8. Apart from the conventional farming strategies, rooftop farming has also been widely adopted across the globe. This farming method facilitates increasing provision of greenery in compact metropolises, and Singapore has shown its cases on rooftop farming. According to the Centre for Livable Cities (2021), rooftop farming has widely been promoted in Singapore. Rooftop spaces act as communal spaces, where residents can socialise and design their own community. It is

convinced that by doing so, the rooftop greenery can also reduce buildings' cooling load, as well as provide acoustic insulation. Meanwhile, rooftop farming is yet to be widely adopted in Hong Kong, which can only, sometimes, be found in some commercial buildings.

- 8.5.9. The Consultancy are, therefore, suggesting the utilisation of the rooftop area of GIC building as an area for community garden. To make full use of the available space in the existing infrastructure, the government is recommended to create a community garden in a number of GIC buildings. Community halls and municipal buildings could be a reasonable and feasible starting point. Indeed, promoting rooftop farming in GIC building also facilitates the participation of community members, and to promote general wellness.

Medium-Term Action: Utilising Vacant Government Sites Available for Greening and GIC uses

- 8.5.10. Residents living in the public housing estates are the main users if planters in the public housing estate are transformed into community gardens. The Consultancy have also recognised the needs of community members not living in the public housing estates. Unlike public rental housing estates, residents in the community might not have adequate planting areas in their neighbourhood. Hence, to provide community farming activities for residents of non-public housing estates, the Consultancy suggested utilising vacant government sites available for greening and GIC uses.
- 8.5.11. The utilisation of vacant government sites available for greening or GIC can be considered as a return of vacant land to the community. Apparently, there are more than 850 vacant government sites available for greening or GIC uses (See Figure 8-29) (Development Bureau Hong Kong, 2018). This is also aligned with one emphasis of the Policy Address proposed by the government in 2018, which it aimed at optimising vacant land in the society. Meanwhile, the Consultancy considers this as a medium-term action, as partnership with non-governmental organisations is required. The partnership with NGOs helps to understand the needs in the local community. Community farming could be implemented when there is a community demand.

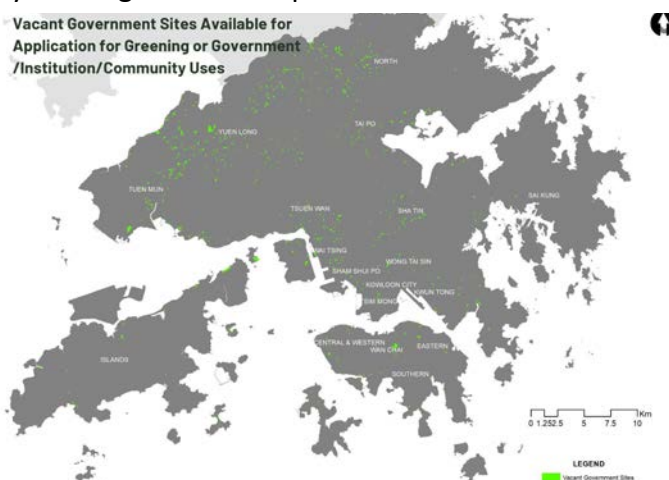


Figure 8-29: Vacant Government Sites Available for Applications for Greening and GIC uses

Source: PlanGen, 2021

Medium-Term Action: Setting Up Regular Bazaars in Multi-functional Spaces

- 8.5.12. In light of the place making in the community, bazaars have been commonly found in the local communities. Organising a bazaar requires the assistance and support from several stakeholders, including governmental departments and non-governmental organisations. For instance, HKCSS (2015) (i.e Figure 8-30) organised a series of bazaars in different districts within a specific period of time, with the aim at boosting local economy and community culture. However, even with the series of bazaars being organised, most programmes are one-off programmes, which continuity and sustainability are lacking.



Figure 8-30: Bazaars in Northern District
Source: HKCSS, 2015

- 8.5.13. The Consultancy have thus drawn insights from the local examples, that bazaars are suggested to be held on a regular basis in multi-functional spaces. Linking this suggestion to Chapter 8.3, areas of open spaces are suggested to be multi-functional and hybridised, in order to optimise the usage of space. Playground and football court are two examples. By organising regular bazaars, this can be seen as a tool to community development and place making to promote social cohesiveness in the society. For instance, farmers and community members are complementary with each other. In farmers' perspective, transaction costs could be saved by selling products directly to customers. On the other hand, in community members' perspectives, bazaars could be a place where fresh vegetables are provided by local farmers and community famers. Thus, the Consultancy suggested organising regular bazaars as a medium-term action, as this action can be taken when community farming is being promoted.
- 8.5.14. All in all, the strategic actions proposed by the Consultancy consist of short-term and medium-term actions. These actions to provide community farming require partnership and efforts made by each stakeholder. In the long run, these strategic actions could be coupling with the government's effort on open space, such as the Agri-Park and on-site leisure farming proposed in the new agricultural policy (Planning Department Hong Kong, 2016).

Promote Participatory Design of Open Space

- 8.5.15. In view of the gaps identified in the public space, this strategic action aims to encourage the co-creation of open spaces between the government and community through enhancing community participation to redesign local open spaces into quality space to cater for the needs of users and stimulate more physical activities with diversified design. The involvement in the co-creation of community spaces could reinforce the community affiliation and encourage frequent use of community spaces to engage in healthy activities. With the local open space as the starting point, the ultimate aim of this action is to empower the citizens to plan for their own healthy community. This action could echo the idea of “Smart People” in empowering the people for more innovative ideas in creation of a better living environment.

Current Effort in Community Engagement in Public Space Design

- 8.5.16. There is an evolving role of citizens' participation in the planning process with technology, enabling citizens to transform from a receiver to a co-planner (See Figure 8-31) (Hasler, Chenal and Soutter, 2017a). Citizens are no longer only receivers of news regarding urban planning, but also act as “living sensors” contributing to aggregated data, assessors and contributors to give comments and share opinions towards plans. At the highest hierarchy, citizens could hold community workshops and advocate bottom-up community plans to co-plan the community through social media platforms (Hasler, Chenal and Soutter, 2017b).

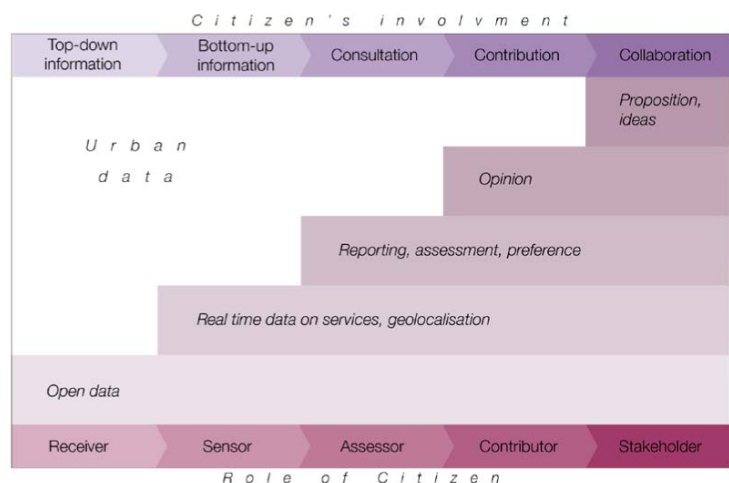


Figure 8-31: Role of Citizen with the Use of Urban Data
Source: Hasler, Chenal and Soutter, 2017a

- 8.5.17. Efforts of a more proactive community engagement in park design could be observed recently through the Micro-parks Project, a joint-departmental park improvement pilot programme (Leisure and Cultural Services Department Hong Kong, 2019). Collaborating with a group of designers — Design Trust, the programme emphasises public participation in the design process with citizens getting involved in the co-design process of the small public pleasure grounds. Four of the underutilised public spaces were redesigned and co-created by the designer together with the citizens. The redesign of Yi Pei Square Playground has changed the negative perception

of people toward the area and stimulated more recreational activities in the neighbourhood. The programme does not only energise the district, but also respond to the needs of the local community and promote a more active lifestyle in the high-quality public space.



Figure 8-32 & 8-33: Comparison Between the Before and After of the Micro-Parks Project: Yi Pei Square Playground
Source: Mpweekly, 2021.

Short-Term Action: Identification of Underutilised Space

- 8.5.18. To start on the promotion of the participatory design of open space, underutilised public space should be identified for the follow-up actions of community redesign. Currently, there are customer appreciation cards, in the form of a QR code linked form, in the Leisure and Cultural Services Department managed open space (See Figure 8-34). These can serve as a tool and transformed into a satisfaction survey, collecting the opinion of visitors toward the places. Unsatisfactory open spaces could be shortlisted for further redesign and refurbishment.



Figure 8-34: Customer Appreciation Card in the Leisure and Cultural Services Department managed Open Spaces
Source: PlanGen, 2021

- 8.5.19. Apart from the Leisure and Cultural Services Department customer appreciation cards, the research conducted by the NGOs on local open space could also be a source of data on underutilised spaces. Neighbourhood Innovation Lab (2021) has recently completed the design studies and research on the public spaces in the Wan Chai District, which identified design opportunities across the different public spaces. These researches could also help to shortlist public spaces for further ideation. The process of screening and filtering of spaces could also involve more public engagement in form of polling, interviews and focus group discussions.

Short-Term Action: Initiative to Engage the Community to Reimagine their Parks

- 8.5.20. With the identification of underutilised spaces, further design initiative could be set up to reimagine the active public spaces. Following the footsteps of the Micro-parks pilot programme, more public engagement could be included in the ideation of the redesign process of the identified underutilised public spaces in urban areas. The initiatives could transform the old local public spaces into quality parks that meet the recreational needs of the community, thus increasing the usage of these spaces, maximising the usage of underutilised areas and revitalising the old area. With the engagement of the public in the redesign process, a bottom-up approach is also established to empower the citizens in the planning and design of local public space.
- 8.5.21. Further action with regularisation of community design initiative should also be advocated to involve the public in the ideation of new public space design. This could be realised through the continuous cooperation with the local community groups to utilise the already-built connections with the local community to foster a more extensive public engagement with easier reach out to the vulnerable groups. A cross-departmental effort is necessary to reduce the bureaucracy in addressing cross-cutting coordination issues, resolving the management disputes and sustaining the initiative.

Medium-Term Action: Digital Platform to Engage Citizens

- 8.5.22. In addition, the scope of community engagement could also be extended to the other community spaces including Community Centres and District Health Centres to increase the usage of these facilities for healthy activities and promote a higher sense of belonging to the community. Different levels of engagement as mentioned in Figure 8-31 could be achieved with various measures. At the sensor level, the collection of health data could be aggregated to district data through e-Health to facilitate urban planning to understand the health characteristics of the district population. Customised healthcare and community facilities could be provided to address prevalent health issues.
- 8.5.23. At the contribution and collaboration level, digital platforms could serve as a bridge in connecting the community to co-imagine a healthy city. Making reference to the CitySwipe in Downtown Santa Monica, USA, public opinions could be collected regarding aspects ranging from seating to parking needs, from the types of lighting to the establishment of public art commission. With the easy-to-understand swipe-to-choose function, application users could reflect their needs through answering Yes/No questions on possible solutions towards the community design alongside with images (See Figure 8-35). The use of mobile applications allows a more efficient engagement with the community as compared to traditional filling-in and analysis of paper-printed questionnaires and eliminates some of location and time constraints in conventional engagement workshops. Digital platform also enables a more extensive engagement with greater participation by targeted users as opposed to the traditional community workshops held in specific time-frames.

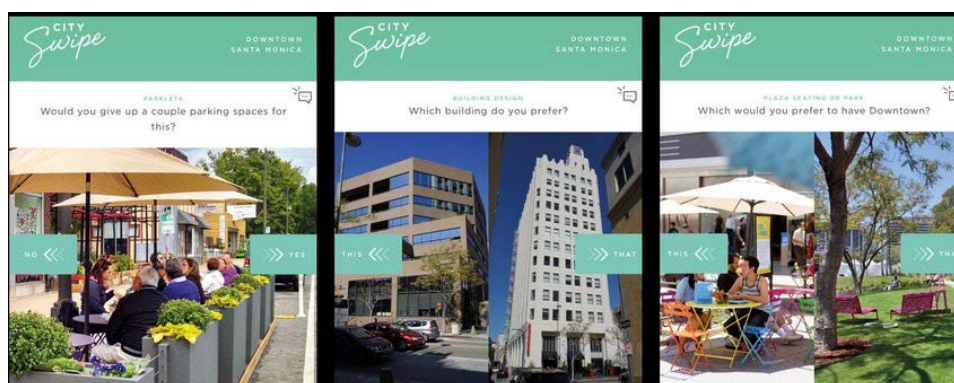


Figure 8-35: Screenshots of CitySwipe Demonstrating the Swipe-to-choose Function
Source: Hasler, Chenal and Soutter, 2017a

Long-Term Action: Healthy Community Toolkit

8.5.24. While the short to medium term actions focus on arousing the public awareness and engagement of the public in the planning of facilities, the long term action of a healthy community toolkit focuses on the empowerment of citizens in voicing out their needs and taking up the initiative to plan for their own health community. Inspired by the practice of the Singapore’s Ministry of Health Office of Healthcare Transformation, the healthy community toolkit emphasises the community level of discussion on healthy city planning.

8.5.25. Derived based on the health considerations listed under the HIA, healthy city elements include housing, healthcare facilities, green, blue open spaces, and streets, could be included in the toolkit to stimulate the discussion among stakeholders. The toolkit could help the community to better articulate their demand for healthy city planning and also empower the people to take on actions to plan for their own healthy community based on the listed elements, encouraging ideation of bottom-up plans. Digital healthy community toolkit could engage a wider participation of the public and stimulate the discussion at the community level. Active co-creation interaction sessions are necessary to complement the toolkit in stimulating discussions and put forward actions of healthy city planning from the community. It is important to note that the suggested toolkit is not to replace the conventional engagement activities, but works as an alternative for empowering the citizens to initiate healthy city planning from the community level.

Potential Challenges and Mitigations

8.5.26. The success of these actions lie on the active participation of the public in the process of healthy city planning. It is paramount for the government to uphold the accountability and transparency of policymaking, rebuilding the trust of the citizens toward the institution. Effective engagement of civil society could reconnect the people with the government and contribute to the sustainable development of a healthy city with both top-down and bottom-up effort.

9. Implementation Plan

9.1.1. With the goal of “Creating a Healthy City through Improving Health for All in Hong Kong”, four strategic directions 1) Strengthen Planning Guidelines to Promote Healthy Developments, 2) Empower Flexible Space Usage for Resilience, Emergency and Healthy Practices, 3) Transform Spaces for Customised Active Mobility, and 4) Enhance the Open Spaces for Healthier Lifestyle are formulated with the following strategic actions that would be implemented in different periods of time. The following phasing programme (See Figure 9-1) summarises the proposed strategic actions with a time-frame, and they are classified into short term, medium term, as well as long term.

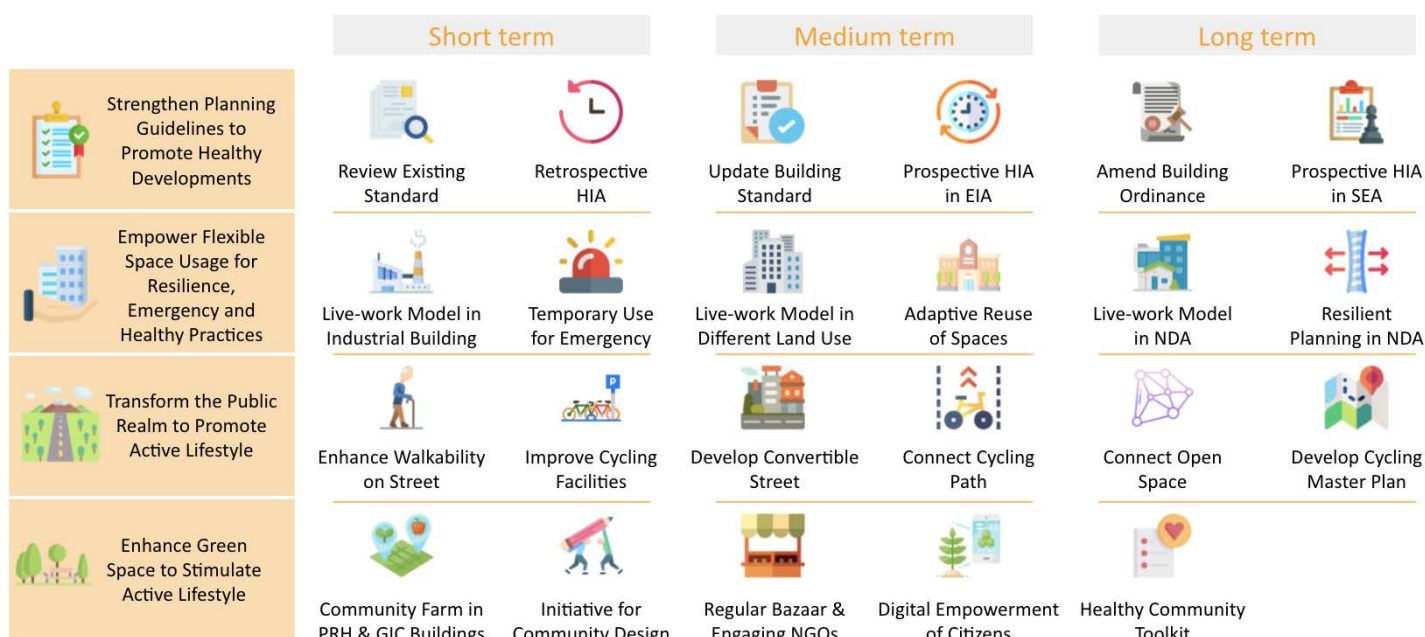


Figure 9-1: Phasing Programme of Strategic Actions

Source: PlanGen, 2021

9.1.2. There are a few key considerations in prioritising the actions into different time frames. Firstly, actions that are the prerequisite of other long-term measures such as reviewing the existing standards would be prioritised in order to put forward other actions. Actions regarding emergency uses would also be prioritised in short term measures to cope with the current needs of Hong Kong. Secondly, actions that require relatively more resources or changes of the existing planning policies such as the rezoning of land would be designated as medium- to long-term actions. It is believed that these strategic actions take a longer time to be implemented since they require collaboration between government departments and several stakeholders. Opposition from different stakeholders might also appear. Thirdly, some actions are classified as long-term actions to accompany the development of NDA developments in the future.

- 9.1.3. Although the recommended actions are under the four strategic actions, coordination between actions are important to form a comprehensive and holistic Healthy City Blueprint in Hong Kong. In view of that, the above suggested actions are interlinked with other actions. All in all, with the collaborative efforts from the authority, the public, and the related stakeholders, the Consultancy are endeavouring to promote a Healthy Hong Kong for all.

10. Envisioning the Future

- 10.1.1. Building on the vision of Health for All, our Healthy City Blueprint intends to mainstream, operationalise, and integrate health considerations in project planning, community planning, urban design, and urban development into urban governance and strategic management. This Blueprint seeks to complement the Hong Kong 2030+ in enriching Hong Kong's healthy city planning. While numerous pieces of evidence support the positive role of urban planning in protecting human health, existing and newly planned urban areas still have room for improvement in grasping health opportunities and alleviating risks. Putting health and well-being at the core of urban development and management goals is urgent and timely, so as to enhance urban resilience in the post-pandemic era.
- 10.1.2. Beginning in an urban context, the COVID-19 pandemic reveals the need to take urban health investments seriously and to adopt an integrated approach that considers physical health, mental health, and social wellbeing as well as the associated health determinants. The casual relationship between COVID-19 and age, gender, mortality, and premorbidity is an example to demonstrate how critical it is to consider sociodemographic prerequisites when building a healthy city and how achieving a healthy lifestyle and well-being is so crucial. Investing in healthcare alone, especially in large hospital facilities, is insufficient. In this Blueprint, an intersectoral, decentralised, and strategic approach to public health promotion is proposed, and further illustrated by four strategic actions including strengthening planning guidelines, empowering flexible space, promoting customised active mobility, and stimulating active lifestyle.
- 10.1.3. As Hong Kong continues to expand and develop, a dramatic shift in public health from treatment to primary prevention and health promotion is not only a wise move, but a necessary one. Managing health risks in the urban built environment and taking advantage of the many health opportunities offered by it will not only help achieve public health objectives, but will also promote urban development, improve the quality of urban life, and enhance urban competitiveness. The Blueprint aims at comprehensively promoting these co-benefits of health and urban development and meeting the key policy requirements for healthy city development. It is believed that Hong Kong's successful experience will provide valuable lessons for other high-density Asian cities.

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Appendix A Team Profile

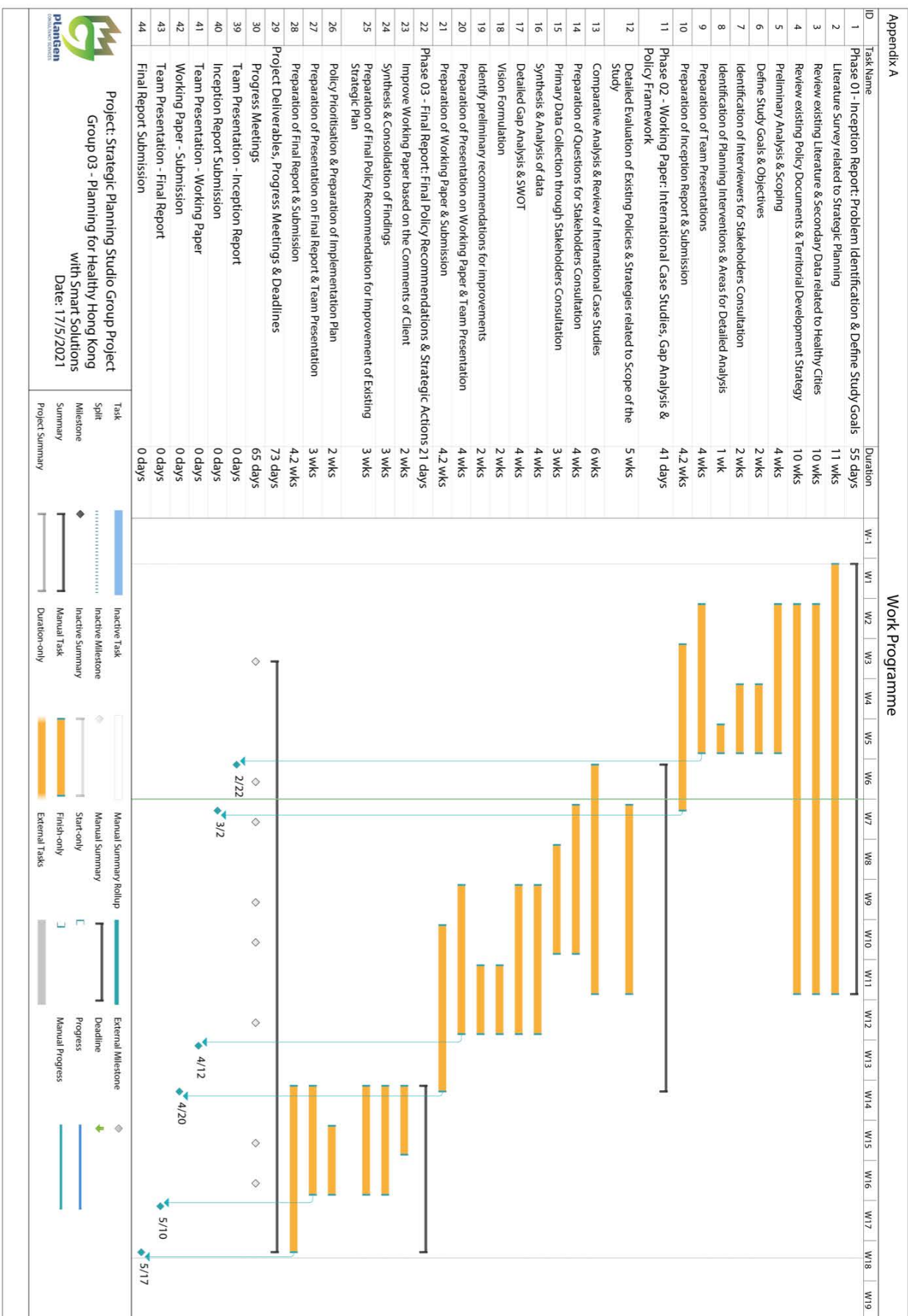
Name of the Consultant and Role	Responsibilities
<p>Lam Long Yin Davy</p> <ul style="list-style-type: none"> - Project Manager - Senior Town Planner 	<ul style="list-style-type: none"> ● Overall coordination of project team ● Conduct internal progress meetings ● Coordinate with the teaching staff and other stakeholders ● Review and comment on project reports prepared by the project team ● Provide inputs to project proposals and plans ● Review existing plans and policies on healthy city projects ● Work with the project team in: <ul style="list-style-type: none"> ○ Evaluating existing policies and plans ○ Identify international best practices ○ Analysis of existing situations ○ Development of visions, objectives and goals. ○ Preparation of implementation plans
<p>Lo Che Fung Yasmine</p> <ul style="list-style-type: none"> - Deputy Project Manager - Town Planner - Research Expert 	<ul style="list-style-type: none"> ● Assist PM for overall coordination of project team ● Assist PM in conducting internal progress meetings ● Assist PM for coordinating with the teaching staff and other stakeholders ● Review and comment on project reports prepared by the project team ● Provide inputs to project proposals and plans ● Review existing plans and policies on healthy city projects ● Work with the project team in: <ul style="list-style-type: none"> ○ Evaluating existing policies and plans ○ Identify international best practices ○ Analysis of existing situations ○ Development of visions, objectives and goals. ○ Preparation of implementation plans

<p>Kam Hin Wa Lewis</p> <ul style="list-style-type: none"> - Deputy Project Manager - Town Planner - Sociology Expert 	<ul style="list-style-type: none"> ● Assist PM for overall coordination of project team ● Assist PM in conducting internal progress meetings ● Assist PM for coordinating with the teaching staff and other stakeholders ● Review and comment on project reports prepared by the project team ● Review socio-economic implications of unhealthiness on citizens ● Provide recommendations for formulation of policies and plans in the capacity of sociology experts. ● Review existing plans and policies on healthy city projects ● Work with the project team in: <ul style="list-style-type: none"> ○ Evaluating existing policies and plans ○ Identify international best practices ○ Analysis of existing situations ○ Development of visions, objectives and goals. ○ Preparation of implementation plans
<p>Wong Hei Ting Crystal</p> <ul style="list-style-type: none"> - Deputy Project Manager - Town Planner 	<ul style="list-style-type: none"> ● Assist PM for overall coordination of project team ● Assist PM in conducting internal progress meetings ● Assist PM for coordinating with the teaching staff and other stakeholders ● Review and comment on project reports prepared by the project team ● Provide recommendations for formulation of policies and plans in the capacity of Town Planner ● Review existing plans and policies on healthy city projects ● Work with the project team in: <ul style="list-style-type: none"> ○ Evaluating existing policies and plans ○ Identify international best practices ○ Analysis of existing situations ○ Development of visions, objectives and

	<p>goals.</p> <ul style="list-style-type: none"> ○ Preparation of implementation plans
<p>Chen Ziyu Bryne</p> <ul style="list-style-type: none"> - Town Planner - Spatial Analyst 	<ul style="list-style-type: none"> ● Identify suitable methods to analyse primary and secondary data ● Synthesis and coding of data where necessary ● Identify spatial correlations of issues related to healthy city development ● Provide necessary inputs to Inception Report, Working Paper, Final Report in the capacity of Town Planner and Spatial Analyst ● Work with the project team in: <ul style="list-style-type: none"> ○ Evaluating existing policies and plans ○ Identify international best practices ○ Analysis of existing situations ○ Development of visions, objectives and goals. ○ Preparation of implementation plans ● Provide recommendations to team in the capacity of Town Planner and Spatial Analyst
<p>Isuru Biyanwila</p> <ul style="list-style-type: none"> - Town Planner - GIS Expert 	<ul style="list-style-type: none"> ● Gather relevant GIS data required for the assignment ● Conduct required GIS analysis at all stages of the project ● Join field surveys and collect primary data where necessary. ● Provide necessary inputs to Inception Report, Working Paper, Final Report in the capacity of Town Planner and GIS Expert ● Work with the project team in: <ul style="list-style-type: none"> ○ Evaluating existing policies and plans ○ Identify international best practices ○ Analysis of existing situations ○ Development of visions, objectives and goals. ○ Preparation of implementation plans ● Provide recommendations to team in the capacity of Town Planner and GIS Expert

<p>Wong Kin Man Monique</p> <ul style="list-style-type: none"> - Town Planner - Environmental Expert 	<ul style="list-style-type: none"> ● Evaluate the existing environmental condition of Hong Kong related to healthy city development ● Identify and evaluate environmental determinants of development of healthy city ● Provide necessary inputs to Inception Report, Working Paper, Final Report in the capacity of Town Planner and Environmental Expert. ● Work with the project team in: <ul style="list-style-type: none"> ○ Evaluating existing policies and plans ○ Identify international best practices ○ Analysis of existing situations ○ Development of visions, objectives and goals. ○ Preparation of implementation plans ● Provide recommendations to team in the capacity of Environmental Expert
<p>Kwong Ching Man Catherine</p> <ul style="list-style-type: none"> - Town Planner - Economic Expert 	<ul style="list-style-type: none"> ● Evaluate the existing socio-economic condition of Hong Kong related to healthy city development ● Identify and evaluate socio-economic issues of development of healthy city ● Provide necessary inputs to Inception Report, Working Paper, Final Report in the capacity of Town Planner and Economic Expert. ● Work with the project team in: <ul style="list-style-type: none"> ○ Evaluating existing policies and plans ○ Identify international best practices ○ Analysis of existing situations ○ Development of visions, objectives and goals. ○ Preparation of implementation plans ● Provide recommendations to team in the capacity of Town Planner and Economic Expert

Appendix B Work Program



Appendix C List of Interview

Sector	Speciality and Expertise of Interviewees	Code
Planning Authority	Former Director of Planning	A
	Experienced town planner from Planning Department	B
Academia	Scholar specialising in High Density Healthy City Development	C
	Scholar specialising in Healthy and well-being urban planning	D
Healthy Sector	Representative from DHC	E
	Medical doctor involved in community healthcare from NGO	F
Smart Industry	Land surveyor experienced in the application of BIM and GIS	G
	Scholar specialising in GIS	H
	Digital Health Expert	I
Social Sector	District Councillor in Kwai Tsing District	J

Appendix D Gist of Interview

Interviewee A – Gist of Interview
<p>Date: 30 March 2021</p> <p>Format: Face-to-face interview</p>
<p>Section 1: Current Healthy City Policies</p> <ul style="list-style-type: none"> ● Hong Kong is quite healthy in terms of life expectancy ● The major policy hurdle in order to improve is to break the bureaucracy which requires integrated efforts between government departments ● The Healthy City initiative is mainly driven by the Department of Health, which promotes “prevention over cure”, and the prevention of infectious disease ● A more integrated and holistic approach is needed to create a campaign for the healthy city <ul style="list-style-type: none"> ○ E.g. The promotion of walkability is currently done by the Transport Department under the “Walk HK” initiative with the aim to improve the transportation linkage. However, such initiatives should also play a role in upkeeping the population’s health. ○ A walkable city is a safe city and a just city
<p>Section 2: Improvements in the Public Realm</p> <ul style="list-style-type: none"> ● Public space is a shared public good instead of an exclusive space ● Hierarchy of public space can be divided into three categories: dot, line, and plane <ul style="list-style-type: none"> ○ Dot: Neighbourhood public space, small but accessible ○ Line: Waterfront promenade/harbourfront promenade, take; streets that connect the dots ○ Plane: Regional parks, e.g. Victoria Park; Parks within public housing estates, also shared to the public ● Current problem: Double aging problem (aging buildings + aging population) in the old districts, these districts did not anticipate the current level of density ● Make use of every opportunity to create accessible neighbourhood open space in the old districts, even they could not be perfect open spaces ● Should make use of the opportunity of urban renewal in maximising the provision of green spaces in the public realm ● Challenges in pavement improvements without urban renewal: utilities underground ● Challenges for pedestrianisation: <ul style="list-style-type: none"> ○ Property owners and shop owners will against the idea as vehicles could not stop at the door and will harm their business

- o Street management problem, especially during night time would create nuisance e.g. Sai Yeung Choi Street South pedestrian zone
- o Institutional arrangements may also receive backlash: Business Improvement District (BID) in UK advocated by the planning authority received complaints from the grassroots
- Pedestrianisation would require long-time persuasion in changing the mindset of the people who are against the idea to reach a win-win situation
- Public Open Space in Private Development (POSPD) use a master plan as a tool to layout the public space within a private development
- Commercial property management continuously take up the responsibility to manage the whole private realm, which can also add value to the commercial podium

Section 3: Underground Development

- Unavoidable way of development with land supply constraint in Hong Kong
- Reservation for massive digging for underground mall
- What is the purpose? What are the benefits? What are the costs that we need to pay? Are there better alternatives?
- Have to consider the whole life cycle of the underground project, not only the end state

Section 4: White Zone with Health Impact Assessment

- Assessments may create complicated development process
- Existing EIA has already taken into account some health impact
- Elements of HIA can be embedded into HKPSG
- White Zone is similar to CDA in Hong Kong, but goes a bit more with no 100% fix in GFA for development; The merit of White Zone is not absolute

Section 5: Housing

- Termination of PSPS: the Housing Authority is not comfortable with the quality of construction of private developer and find the model not very helpful as it also requires manpower for the supervision of quality delivered
- Applicability of UK mixed tenure development:
 - o UK lacked a public authority in provision of public housing
 - o Social segregation within a building occurs

Section 6: Active Transportation – Cycling

- Existing constraints:
 - o Topography
 - o Land availability
- May not be efficient provision of road space for cycling

Section 7: Home-job Distribution

- Government has little ability to direct where economic activities to locate
- Use policies to influence the market force for location decision
- Reserve economic land that can accommodate jobs
- Allocation of public facilities

Section 8: Agricultural Land

- There is room to improve the local food supply system but the effect of the promotion of urban agriculture and vertical farming will not be significant given the large population in HK
- Such initiatives can make an advocacy and could become a part of the healthy city component
- Urban rooftop farming can increase greenery and reduce heat island effect
- Current situation: A lot of abandoned farmland:
 - Low crop yield of local farming which has to compete with imported food and vegetable
 - Segregated land ownership of farmland
- Long Valley Nature Park is a government initiative which allows the rent out of land to the farmers to carry out wetland cultivation while maintaining the ecology
- Can consider whether the government, on behalf of the community, should provide subsidy to the farmer to provide the rural landscape for public enjoyment
- Rural land as agriculture:
 - Food production
 - Land management
 - Create a “rural scene” for the urban dwellers to enjoy

Interviewee B – Gist of Interview

Date: 24 March 2021

Format: Face-to-face interview

Section 1: Current Healthy City Policies

- Implicit policies such as standard on the distance to closest facility
- Should position Healthy City in a higher hierarchy
- Insufficient resources in healthy city planning
- Overlook the importance of mental health, blue space could be a measures to relieve mental stress, HKPSG can tackle the mental issue
- Cooperation with health profession is needed to translate academic studies into planning proposal in a high density city like Hong Kong

Section 2: Green Space

- In Hong Kong, public space are most significant to promote healthy city
- Everyone could enjoy the benefit of improvement on the public space
- It is difficult to improve the living space, i.e. the size of housing due to limited land resources
- There are limitations on country park, e.g. high travel time and cost, not accessible to elderly
- Therefore the focus on public space should be put on neighbourhood parks especially in districts with a high elderly population, e.g. Yau Tsim Mong district.
- Connection between parks are key to improve the quality of green space in Hong Kong
- New Town is performing well in terms of the connection of parks, cycling facilities and pedestrian pathways
- More efforts should be made in old urban area with high elderly population
- Possible directions to improve green space
 - Widening of pedestrian paths by sacrificing vehicular road space
 - Better landscaping that facilitate walking
 - Creation of sense of community
 - Visual interest for orientation of people

Section 3: Underground Development

- It is difficult to have large scale development due to the high construction cost
- But small scale development is inefficient

- Should consider the safety requirements on emergency exit stated in the Building Ordinance
- Major objection from private developers as the construction of underground will affect their business
- Challenges in Tsim Sha Tsui: Preservation of valuable trees
- Challenges in Causeway Bay: Streets are too narrow for exits, concerns raised by on grade retail shops

Section 4: White Zone with Health Impact Assessment

- Hong Kong has undetermined land use which is similar to the white zone which mainly in the New Territories
- Two hindrances to promote the white zone concept
 - Acceptance of the public, the planning department used to determine all the land use
 - Systemic problem, in the NDA, the government has to carry out land resumption, if the land has not specific land use, the government could not justify there is a urgent need to resume the land, will face legal challenge on the land resumption process
- In urban area, difficult to find a piece of land to zone as white zone development
- Possible way to promote white zone is through partnership with private developers, we could establish the white zone in new town development

Section 5: Housing

- Termination of PSPS: change of housing policy, there were no demand for HOS
- There was a change in the division of labour, the government doesn't need help from the private developers
- Currently the housing policy is supply-driven, developers could carry out different scale of land developments according to their size

Section 6: Active Transportation

- The government stressed on railways and buses but not walking and cycling
- Pedestrian roads are too narrow for the increasing numbers of wheelchair due to aging population
- Elderly are not willing to walk when there are too many cars, air pollution is serious
- To tackle the hilly terrain in Hong Kong, connection between ground level and podium could promote walking
- Redevelopment is the chance for us to develop better alternative route
- Shared facilities such as shared bicycle should be promoted
- During COVID-19, foreign cities has turned some of the car lanes to pedestrian roads or bicycle lanes

- The design of vehicle road in Hong Kong is not suitable for cycling as there are too many junctions
- Harbourfront in Hong Kong island is good for cycling since there are no junctions

Section 7: Home-job Distribution

- Decentralised workplace
- COVID shows that work-from-home is possible
- More office should be located in the fringe area
- Flexible office space
- Residential and Commercial mixed land use in the same building

Section 8: Healthcare Facility

- Emergency plan is needed to prepare for the next pandemic
- Facilities should have multiple and alternative uses
 - e.g. HKCEC, currently HKCEC could not be used for quarantine camp since there are a lack of water pipe, we should put this as consideration when planning for the future
 - e.g. Park should reserve space for quarantine and social distancing purpose
 - e.g. Hotel for quarantine should equipped with better air ventilation system, closer to hospital and larger loading and unloading space for ambulance
- Evenly distribution in every district to facilitate patient transit
- Transparent planning procedure is important to reduce the opposition voice from the public like Chun Yeung Estate before

Interviewee C – Gist of Interview

Date: 24 March 2021

Format: Face-to-face interview

Section 1: Current Healthy City Policies

- The strengths of Hong Kong include
 - A high proportion of country parks, which are big and natural
 - A long life expectancy
- The deficiencies of Hong Kong include
 - The relatively low usage of public open spaces, particularly country parks, partially due to the passive design of these spaces
 - Lack of children-friendly policies in healthy city planning as illustrated by a low level of physical activities of the children and inaccessibility to healthy foods for school kids
 - Lack of administrative coordination between different departments in healthy city planning

Section 2: Impact of COVID-19

- It is expected to have more community-centre activities
- There are both physical and virtual distances in the post-pandemic era. We need to reduce both physical and virtual distances in the healthy cities planning
- We need to incorporate emergency management and crowdedness management into urban planning

Section 3: Possible Smart Solutions

- A database similar to the housing property record that can record all the biometric characteristics is important
- Such a dataset can be used for the stimulation of a lockdown and thus will be helpful to prepare for the next pandemic outbreak

Section 4: White Zone with Health Impact Assessment

- Health impact assessment is helpful as it will tell the public and authorities the burden of health, which further justifies the investment for health in the planning and development process

Interviewee D – Gist of Interview

Date: 19 March 2021

Format: Online interview

Section 1: Current Healthy City Policies

- Health cities initiatives were promoted at the district level of Hong Kong a decade ago. Yet until now there has been a lack of integrated, strategic approach to promote a healthy city. Health has been narrowly defined in the planning, but it should not. Equally important is the concept of well-being
- Hong Kong has a good foundation for health city planning in terms of natural green space, public awareness, and infrastructure
- There is a lack of clear vision for building Hong Kong into a healthy city, HK2030+ identified some issues of healthy city but we need a strategic level planning on healthy city

Section 2: Impact of COVID-19

- Health is a broad concept to the extent that it is more than disease
- Open space should be designed for active social interaction instead of somewhere to sit. Similarly, the healing functions of natural resources should be highlighted in the future planning
- The role of built environment in social cohesion should be highlighted. For example, green space with passive design could not stimulate social cohesion

Section 3: Vulnerable Groups and Senior Residents

- Indoor space, particularly their residence, is particularly important to the senior people.
- Public engagement with the senior group is important to human-centred design and planning. Singapore is a good example in this regard.

Section 4: Active Transportation

- Car-free zone can enhance pedestrian walking experience as people are not comfortable to walk when many cars are along the roads
- The size of plot and block in Hong Kong is quite small which is not car-friendly
- More car-free zone can be implemented for open space
- By the concept of TOD, area within the service area of public transport nodes, we should encourage people to use public transport
- Places with mixed land use is suitable for enhancing walkability
- Create a walkable community in area with slopes such as Central and Western district as it is not car-friendly

- Hong Kong is lagging behind due to sedentary behaviour
- Walkability assessment can be done when having development in new town or redevelopment project
- Cycling are seen as recreational activities instead of commuting means
- Taking Guangzhou as an example, they have a greenway initiative that linking up green space and the natural environment and promote walking instead of using private cars

Section 5: Green Space

- As a planner, we have the power to do zoning, e.g. turning other land use into green space, promote diversified mixed land use
- Multifunction green space should be proposed
- More tree doesn't really help, it increase the surrounding land value and cause gentrification
- Problems of HKPSG
 - Should be design-based instead of percentage based
 - Only focus on the percentage of green space per head
 - Accessibility, Connectivity should be included in HKPSG
- Washroom, Fitness, Open Space percentage also should be included
- Hong Kong is still using the old concept of universal design, we should make more bold action, such as healthy city concept

Interviewee E – Gist of Interview

Date: 1 April 2021

Format: Telephone interview

Section 1: Current DHC Development

- Criteria for location of DHC
 - Accessibility
 - Convenience to resident, accessible and disable-friendly
 - All the members can easily access to the centre with barrier-free access
 - Size
 - At least 10,000 sq. ft.
 - It is difficult to find a premise of this size in both private and public development
 - Availability in the Market
 - The size requirement has already limited the number of options available
 - Private developer would look for synergising effect of the rental properties, which is quite difficult for DHC to look for a suitable premises
- By 2022, there will be 7 DHC in operation while DHC in 11 districts is still under preparation for the site
- The long-term goal is to located all the DHC in the government building
- However, time is need to construct the new building or to relocate the existing services to other places
- Some districts is still looking for suitable places in the government building, such as Kwai Tsing district and Sham Shui Po district, which is currently designated in a commercial building and a shopping mall
- In transition, the department will invite some NGOs to offer smaller scale of services to reduce the cost of retrofitting in the rental premise during the transition period

Section 2: Satellite Centre of DHC

- Each district is divided into a number of sub-districts; Number of satellite centres in districts is determined by the number of sub-districts
- There are 5 satellite centres in Kwai Tsing District under 5 sub-districts
- The tender will have a minimum requirement of the number of satellite centres and an additional services points

- Interesting to note about Yuen Long District: although the area of Yuen Long is large, there are only 3 sub-districts, more service points will be required in addition to the 3 satellite centres
- Difference between DHC and its satellite centre
- Main difference in terms of size and facilities
- No different in terms of personnel as the medical professionals can be mobile to station at both core centre and satellite centres
- Satellite centre must have a room of 300 sq. ft. for small-group activity and a room for the stationed nurse for consultation
- Core Centre is larger in terms of size and providing more space for large scale activity with more members and spaces for community rehabilitation equipment

Section 3: Promoting DHC

- Currently there is only 1 DHC in operation, It is difficult to have momentum in promoting DHC to the public
- Targeting at different groups, such as youngsters, elderly, working population, there should be different way of promotion
- Promotion are usually done by advertisement at different places, including MTR, minibuses, street station
- There are also outreaching programmes and mobile vehicles in promoting
- Partnership with local corporations, such as schools and district council, are also important
- As the traditional mindset of citizen is that they will go for doctor only when they are having sickness, It is a relatively new concept to promote preventive healthcare
- Unhealthy habit as the root cause of the health issues, preventive care is about promoting healthy lifestyle
- It is difficult to have a change in mindset and a paradigm shift from the traditional mindset to preventive care
- A change in mindset is also important for the medical professionals to offer more services for preventive measures, rather than medical therapy
- As for operation, it is not too difficult to look for tender and operators and they are very willing to promote the concept of preventive healthcare
- Operational difficulties include the spatial requirement of 10,000 sq. ft. and the difficulty to recruit medical personnel to provide services
- The services of DHC is constant reviewed to improve as it is a relatively new policy
- The medical system is serving as a platform to providing information regarding health to the public
- Multidimensional approach is important to promote health
- Other environmental factors, such as pollution, water resources and social atmosphere is also important to improve the health of the general public
- Work environment and transportation are conducive to health

- There are also some incentives from different sectors to encourage preventive measures, e.g. insurance company would lower the insurance premium if you walk 10,000 steps daily, economics incentive for annual health check-ups

Interviewee F – Gist of Interview

Date: 16 March 2021

Format: Online interview

Section 1: Current Healthy City Policies

- Clear target needed for healthy city development: does it mean to achieve SDGs? What determinants? Hong Kong should develop its own target of a healthy city
- Social participation and awareness is the key, many related projects are just one-off activities, that does not develop a culture for healthy city
- In Hong Kong, it is about consumption pattern, culture, education, employment, etc., more than diseases
- A lack of district health data
- May start from redevelopment to promote healthy city

Section 2: Impact of COVID-19

- Demand for health is enhanced but
- There can still be KPI for 2030 perhaps (such as blood pressure, obesity, activity level, chronic diseases data) → to be applied in live work, health in all dimensions
- Restructure the social determinants of health too
- Prevention > cure (we cannot only treat health when you retire)

Section 3: Possible Smart Solutions

- Distribution of commercial land uses i.e. shopping malls
- May cater for small businesses in existing commercial spaces
- Promote social life
- Can still turn into open space for people to enjoy air conditioning
- Active living facilities
- Electric vehicle and bus → the incentive is still low
- Encourage people to use more public transport
- Redevelopment: how to maintain small businesses during redevelopment, maybe by a fair or bazaar
- Flexible / conversable land uses
 - Schools/ community halls can be opened for public spaces during unused times
 - Malls can also be converted into open, social spaces

Section 4: Healthy Equity

- Lack of management on standards in terms of hygiene, quality of housing
- Strengthen building management
 - Furnishing
 - Pipe standard
 - Liability of landlords in quality assurance
- Social system
 - Key Performance Indicators for diminishing poverty
 - Not only about income or monetary support
 - But also about dimensions like housing
 - Key Performance Indicators for social inclusion

Section 5: Vulnerable Groups and Senior Residents

- At first, it's about the lack of access to resources
- At later stage, it concerns about
 - access to information
 - Job security → links to housing and living conditions
 - Discrimination → being accused of dispersing COVID-19

Section 6: Preventive Healthcare System

- Community social space
- Pleasant walking experience
 - Fewer vehicle
 - More planting on streets
 - Wider footpaths
- Policies on
 - Air pollution alleviation and monitoring
 - Management and regulations on housing standards
- Community participation is the key
- IT
 - Capture health database
 - Encourage health seeking behaviours
 - With data, pharmacists and other health professionals can also give health advice
- Health screening system

- Common KPIs for all people at stake: working and living standards (working hours are concerned)
- Encourage people to get access to green space
 - Since travelling time and cost can impose burden on working class and minority
- Community healthy space
 - Malls, roads, local businesses integrated with social space

Section 7: Housing

- Lack of social spaces and community facilities, and sky garden (green spaces) in public housing nowadays (fully utilise the GFA) → why not a clubhouse kind of thing for public housing
- Cannot expect the facilities provision of the overall community can cater for the social and recreational needs of those residents in the public housing

Section 8: Food System

- Problems: Junk food and large portion as the trends
 - Time consideration
 - Large portions sold at supermarkets
 - Large portions of food at restaurants are considered worthy
- Food Label (health warning)
- Technology to alert individuals e.g. daily alcohol consumption level
- Partnerships with food distributors
- Community scheme (with sustainability)

Interviewee G – Gist of Interview

Date: 27 March 2021

Format: Online interview

Section 1: Current Healthy City Policies

- In terms of land use, the planning of large-scale NDAs development are now more environmentally concerned, ratio of environmental sustainable related land use are higher pollution facilities will be put into cavern
- In terms of housing, there are more guidelines on green building, zero carbon building, Incentive are offer to promote more environmentally friendly building design, e.g. BEAM+ Platinum
- In terms of transportation, air pollution are significant issues in Hong Kong,
- A number of policies adopted to control the pollution from transportation, e.g., underground operation, use of EVs and autonomous car, expansion of public transit network ss transit and taxation on car purchase
- There many stakeholders concern in promoting a healthy city, e.g. green building are of a higher cost, the cost will be shifted to consumers as developers are not willing to pay the cost
- Hong Kong is behind in terms of promoting healthy city and the policy effects are limited
- The government should not follow the past thinking in promoting new policies

Section 2: Possible Smart Solutions

- Different countries are adopting smart city initiatives with technology
- The responses of these smart city initiatives might not be satisfactory even with huge amount of data collected
- The government should collaborate with the private sector in terms of data collection and adoption of smart city initiatives
- Smart solutions does not necessarily to be related to Information Technology, innovative and out-of-the-box ideas can be part of the smart solution
- It is important to have a paradigm shift in policy making to have more participation of the public
- The relationship between the government, the people and the environment is crucial for the smooth operation of any policy

Section 3: Impact of COVID-19

- Crowd management is the most popular smart technology adopted during COVID, including facial recognition, temperature checking
- Data is essential for the crowd management

- There are international example on the control of people's movement with the use of smart technology, controlling the traffic system to ban people from leaving the towns
- Use of IoT and crowdsourcing, e.g. Google Map, could facilitate the government in managing the traffic
- Technology adoption is more about prediction, prevention and simulation, to predict the future behaviour with existing data, to prevent certain activity with crowdsourcing data, and to simulate the future based on the existing data
- Privacy is always of the utmost concern of people regarding data collection
- COVID-19 is a changing point to educate the people to understand about the usage of data, monitoring of health and track of behaviour

Section 4: Use of BIM and GIS technology

- BIM and GIS as the tools to do statistical analysis and data modelling to simulate the whole environment
- Use of BIM and GIS could facilitate the process of impact assessment, including EIA and TIA, to do simulation, such as sunlight and viewshed analysis, simulation of air and noise pollution and the distribution of clinic and hospital
- The simulation result could facilitate planners to design regarding the outcome of the projects
- Tools are just tools, the problem lies in data collection, more data should be available to do the simulation
- Data are more important than the tools, statistics has to be updated to facilitate the simulation

Section 5: Use of Data

- Various types of data is necessary for predictive analysis
- Use of big data, such as crowdsourcing from social media, could enable the professionals to do more predictive analysis
- Garbage-in-garbage-out: If the data collected is wrong, the simulation will be wrong, data accuracy is important for any type of analysis
- While plans cannot predict the emergency situation, such as COVID, monitoring and constant update of data would provide a faster response and predict the future situation
- Plans should be evolving with monitoring and constant update of data
- There should be mechanism and flexibility to deal with the ever changing situation
- Education and communication is important to let the public understand about the usage of data collected to
- The government is reluctant to collaborate with the private sectors as they would not like to take up the responsibility for wrong data and
- There is a lack of holistic approach in taking up the accountability of data usage, many of the policies remain piecemeal

Planning a Healthy Hong Kong with Smart Solutions

- It is about the governcy to build up the trust and understand regarding open data
- It would be a multifaceted problem with the use of smart solution achieving the healthy city

Interviewee H – Gist of Interview

Date: 29 March 2021

Format: Online interview

Section 1: Land Use

- Purpose of Land Use Planning
 - To allocate appropriate land use
 - To avoid incompatible land
 - E.g. Industrial land use should not be allocated near Res.
- Current Situation
 - Rules and regulations on land use by HKPSG, a lot of shortcomings though
 - Rigid/rule-base (e.g. Open Space Area)
 - In terms of accessibility
 - Open Space need to be allocated near residences, otherwise they cannot function well
 - Is there much standard regarding the spatial requirement? (e.g. accessible within 400m)
 - E.g. in Fujian, Open space are guaranteed within 5 minute-walk (requirement)
 - In Urban area, sometimes the residents find it hard to access the open space with the poor road environments

Section 2: Housing

- Some Health Considerations or Measures (Suggested)
 - Micro environment of housing estate affects residents (UK)
 - PM2.5 and Greeneries should be measured
 - make psychologically and mentally
 - Noise Level <70db
- Make fundamental changes to identify places for housing development
 - Not in the stage of studying if site is livable
 - Government is just chasing the number
 - Even design of PRH has been improved, some constraints restricted planners and architects in terms of site planning and design

Section 3: Active Transportation

- Aim: Always better to encourage people walk
 - Walkable City
 - Inter-district: Choices could be provided to people
 - Intra-district: Residents should be encouraged to walk and travel among different facilities (Principle)
- E.g. Singapore
 - A lot of tall trees and shading to pedestrians alongside the pedestrian pathways
 - Even with the humid and hot environment,
 - Still comfortable and underground is available
 - Orchard road is an example (similar to Nathan Road)
- However, roads in some urban areas are narrow
- Possible suggestion
 - Walking underground
 - MTR could serve two purposes
 - Railway services, and
 - a node for underground pedestrian movement
 - More underground pedestrian walkway should be built to divert pedestrian flow (As it is hard to widen roads)
- Underground development is considered as an only way-out, methods of doing this is bit by bit

Section 4: Use of BIM and GIS technology

- Could be used as planning for housing estate and infrastructure
- BIM
 - Architects use it for local environment
 - Identify diverse points of interest/ different views → enjoying green and blue features
 - Design and decide the orientation of the buildings
 - Avoiding heat island effects regarding air ventilation
 - Suggestion
 - Viewshed analysis: how many percent of green and blue spaces that people can enjoy
 - Machine learning analysis
- GIS
 - Planners use it for city

- o Design a new route for kids to go to school (PM2.5)
- o Could be used for Underground Development
 - Feasible but important to change culture
 - Make them willing to use technology, top management, has to accept
 - Common Spatial Data Infrastructure CSDI is opening up
- No subjective judgement → should be made according to facts and scientific data
- Open Space

Section 5: Use of Data

- Data Set → Patient Data (e.g. Rate of Diabetes and Cancer)
 - o Record of data
 - o Density of people
 - o Development density
 - o Building age
 - o Building height
 - o Nearby building provision of open space
- Issue of Privacy
 - o Can only be used for research but not public
 - o Understand the provision of open space

Section 6: Health Impact Assessment

- Brief Suggestion on new elements
 - o Height of buildings
 - o Distribution of open space
 - o Greening percentage

Interviewee I – Gist of Interview

Date: 26 March 2021

Format: Online interview

Section 1: E-health System

- E-health strategies should be developed using co-design principles, where the needs of all user groups with different socioeconomic backgrounds needs to taken into account
- Multiple choices of access points and communication links shall be in place in a good E-health strategy to make it equitable and fair for all citizens.
 - I.e.: people in remote areas or people belong to low income categories may have different opinions on the development of e-health strategies
 - Therefore different types of access points can be developed to reduce this digital divide
- At the same time access to the internet is considered a human right by international development agencies and many countries have taken steps to make sure that every citizen has access to good internet connection
- Advantage of E-health systems
 - it can predict things and prevent you from getting sick
 - allows you to learn your behaviours and adjust things before certain things become problems
 - data generated through the e-health record system can be used in various innovations to push people to spend healthier lifestyles
- It is expected that new service delivery models will be introduced in the healthcare sector with the introduction of E-health strategies across the world

Section 2: Future development of healthcare facilities

- Sometimes the major portion of the people who visit the hospitals are not really sick, but they wanted to monitor their health status
 - These kind of target groups can be examined remotely with the new technology and wearables
 - This will ease the congestion in the hospitals. i.e: mobile doctors work from home, new wearables or test kits (Blood Pressure Tests) in London.
- It is expected that new forms of service delivery models will be developed with the development of smart technologies where doctors can also carry out consultations from home
- The digitalisation of healthcare systems is challenged by the existing healthcare facilities in place in cities, due to interoperability issues, incompatible physical characteristics of facilities

- o Therefore future investments on healthcare facilities or digital infrastructure facilities related to healthcare should look into above aspects
 - E.g. Compatible building designs to run smart healthcare systems,
 - E.g. Move towards more open source agile solutions with high interoperability.
- The upfront investment for digitalisation of the healthcare system can be high, but in the long run it will improve the efficiency of the healthcare system significantly
 - o It has been estimated that the Australian Digital Health Record System project will return 10 dollars over the period of 10 years for each dollar invest at the initial stage of project
- With the COVID-19 people explored successfully deployed new concepts like work from home therefore in post COVID-19 cities in countries like Australia and New Zealand the demand for residential locations will change from city centres to suburbs.
 - o This may create additional pressure on health care facilities in the regional centres which were originally planned for limited threshold limits. In such context digital healthcare facilities can be effectively used to manage these additional demands for facilities.

Section 3: Underground Development

- The data generated through e-health systems and IoT devices can be used to develop various applications to incentivise people to spend healthy lifestyles or be active.
- The concepts of behavioural economics can be promoted using such applications
 - o Give incentive to perform physical activities and exercises
 - o Consumption of healthy foods.
- Datasets available with different agencies and silos can be integrated in different ways to create significant health outcomes in the community.
 - o Personalised route suggestions based on health condition, environmental pollution, and movement patterns.
- The utility companies in Australia use patient's data to make sure to provide alternative utilities during their systems maintenance for some critical patients for whom uninterrupted utility supply is essential
- Digital solutions can be used to track mental health issues such as isolation and depression.
- AI can be used to identify such issues and create facilities to overcome those issues
- Implementing intergenerational solutions can be effectively used to overcome isolation of elderly and can promote these as co-learning opportunities for young people
 - o I.e. Virtual Grandma
- Digital emergency response plans can be developed to increase the resilience of cities to face future pandemics or health related emergency situations

Interviewee J – Gist of Interview

Date: 26 March 2021

Format: Online interview

Section 1: Possible Smart Solutions

- The utilisation of big data has been a trend for smart governance
- Indeed, it is rather an enormous challenge to establish a database to monitor citizens' health and coordinate how and what healthcare resources can be allocated in response
- This is primarily due to the privacy concerns of many locals regarding how their personal information would be treated
- Another obstacle is that such strategy requires a huge amount of locals in participating in the DHC activities so the preventive healthcare movement would not be limited to a small portion of individuals
- It is foreseeable that there is a long way to go in achieving the “Health for All” vision

Section 2: Current DHC Development

- The government's first attempt to develop the first District Health Centre (DHC) is a strategic and bold move to alleviate the existing heavy burden of the healthcare system
- Tremendous financial and human resources are invested for the scheme regarding preventive healthcare.
- During the pandemic, many actions cannot be pushed forward efficiently due to social distancing measures
- Facilities within the centre are not actively utilised
- Even if the current citizen participation is not totally high, we have confidence that the scheme would be much more effective in the post-pandemic era
- Boosting the awareness of preventive healthcare to citizens is a long-term process

Section 3: Promoting DHC

- The government envisages that the DHC will be a service hub with a Core Centre serving as the headquarters and complemented by five Satellite Centres in sub-districts at convenient locations
- Aims to decentralise the preventive healthcare services and enable more people to access the facilities
- Satellite Centres are often too small and not as well-equipped as the DHC
- DHC is huge but the location of it is not very accessible
- Satellite Centres can be expanded and upgraded regarding their size and amenities → more people can be catered

- More models concerning the structure of the preventive healthcare facilities should be better investigated

Section 4: Impacts of COVID-19

- People generally spend more time at home due to health concerns, which is highly associated with the housing issue
- Newly developed public housing
 - Locals enjoy fewer public open spaces compared to the older public housing
 - Lack of the sense of community owing to the insufficient social space
- Social distancing measures and the close down of public parks further exacerbate the problem
 - People are increasingly isolated and country parks which are far from communities become their only choice, regardless of the additional transport fee for some underprivileged
 - A top-down management and policy issue
- More power should be delegated to the District Council which has established a tight network and communication channels with the local residents, when it comes to pandemic situations that often require immediate response
- Health-related built environment issues
 - Broken pipes or poor drainage,
 - Government's response is always protracted → the health of citizens cannot be safeguarded under such circumstances

Section 5: Green Space

- No larger public open space in Kwai Tsing
- Kwai Chung Park was left vacant for 40 years, has enormous potential despite the obstacles faced as a former landfill

Section 6: Active Transportation

- Can be advocated through encouraging people to walk or cycle to the mass transport instead of taking minibuses or buses for interchange
- The government should investigate how and what to provide in terms of infrastructure, in a bid to achieve active transport

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PLANNING FOR THE NEXT GENERATION