香港 HONG KONG 2030+

Towards a Planning Vision and Strategy Transcending 2030

Knowledge Sharing Seminar
"A Smart, Green and Resilient City Strategy under Hong Kong 2030+"

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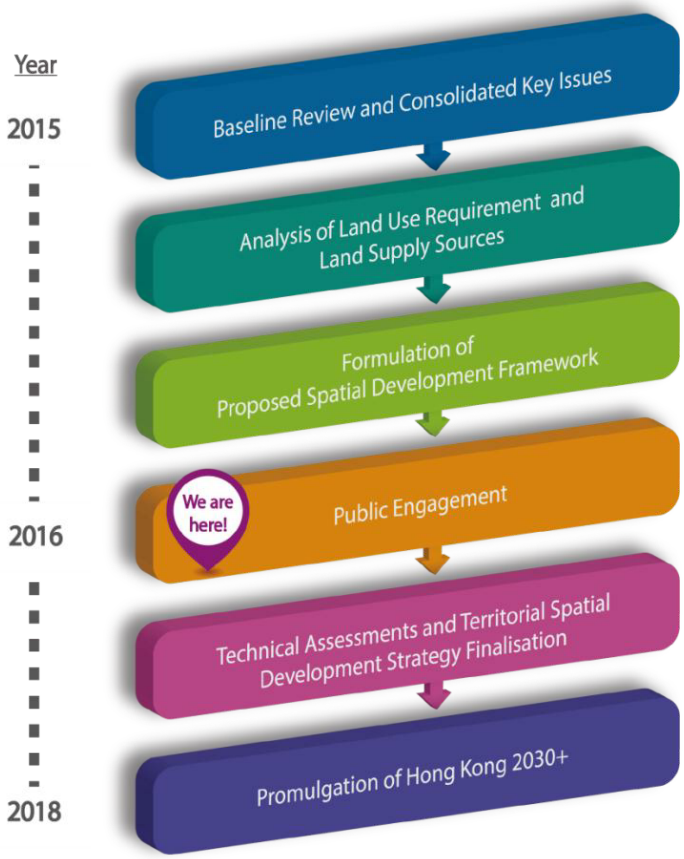
Development Bureau

Planning Department

Background

香港 HONG KONG 2030+

Towards a Planning Vision and Strategy Transcending 2030



- Aims to update the territorial development strategy to guide planning, land and infrastructure development, and the shaping of the built and natural environment of Hong Kong beyond 2030
- This update adopts a visionary, proactive, pragmatic and action-oriented approach to respond to the changing circumstances and challenges ahead
- A 6-month public engagement is being conducted for Hong Kong 2030+ until late April 2017
- The study is scheduled for completion by 2018

Changing Context

Global Megatrends

Regional Dimension

Regional gateway

Reaching half of the world's population within 5-hour flying time

3-hour living circle and 1-hour intercity traffic circle within the Greater Pearl River Delta

China (Guangdong) Pilot Free Trade Zones

Belt and Road

Local Context

Double Ageing phenomenon

Liveability aspirations

Home-job imbalance

Land and infrastructure needs

Readiness for climate change

Overview of Hong Kong 2030+ Proposals

Vision

To become a liveable, competitive and sustainable "Asia's World City"

Overarching Planning Goal

Championing sustainable development to meet our present and future social, environmental and economic needs and aspirations

Three Building Blocks

Three building blocks for achieving the vision and overarching planning goal

1. Planning for a Liveable High-density City
2. Embracing New Economic Challenges and Opportunities
3. Creating Capacity for Sustainable Growth

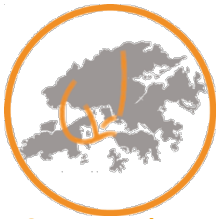
Key Strategic Directions and Actions

Conceptual Spatial Framework

One Metropolitan Business Core

Two Strategic Growth Areas

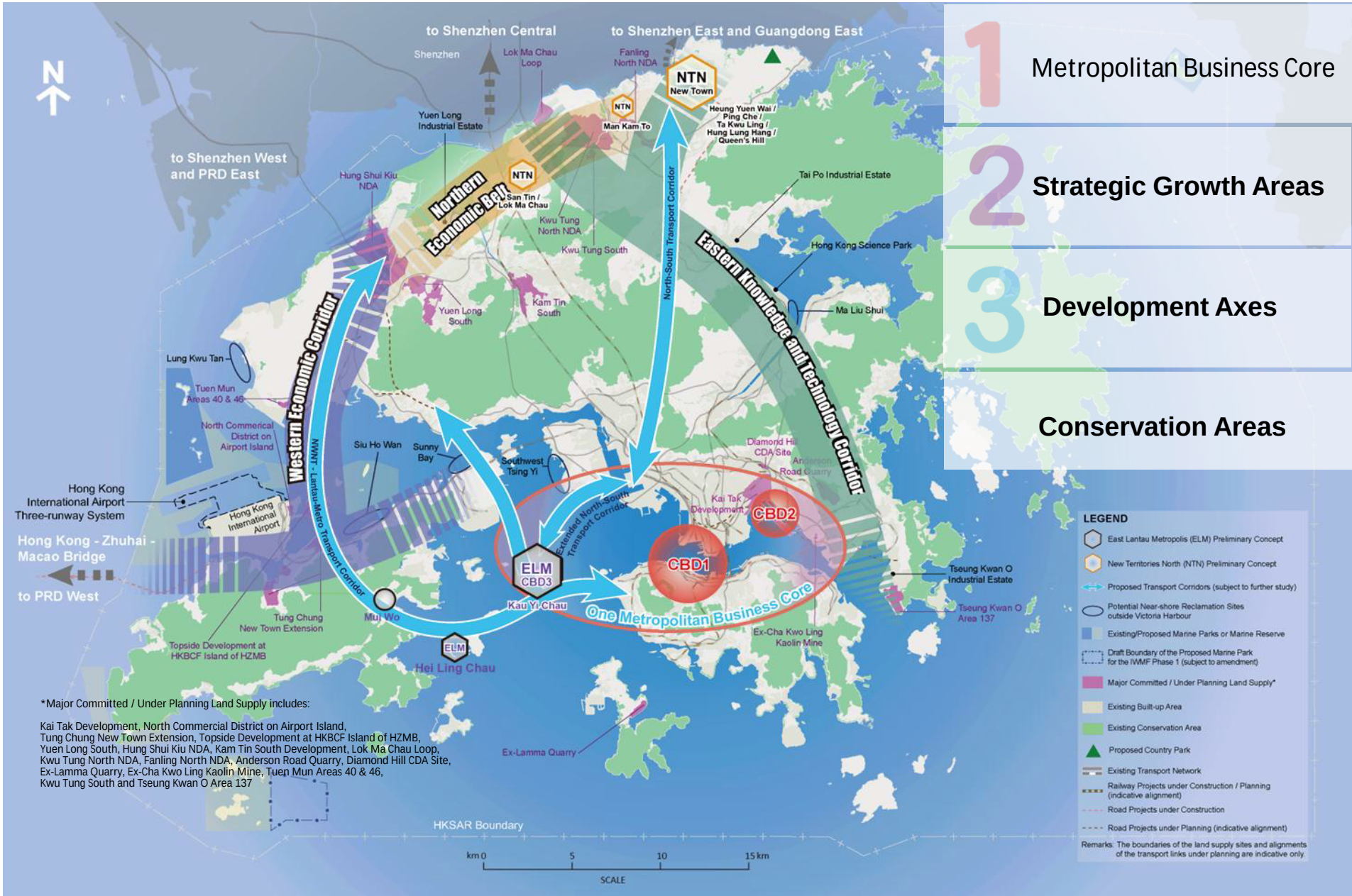
Three Development Axes



Supporting Transport Network

- Vision-driven
- Capacity Creation
- Action-oriented
- People-centric

Proposed Conceptual Spatial Framework



*Major Committed / Under Planning Land Supply includes:

Kai Tak Development, North Commercial District on Airport Island, Tung Chung New Town Extension, Topside Development at HKBCF Island of HZMB, Yuen Long South, Hung Shui Kiu NDA, Kam Tin South Development, Lok Ma Chau Loop, Kwu Tung North NDA, Fanling North NDA, Anderson Road Quarry, Diamond Hill CDA Site, Ex-Lamma Quarry, Ex-Cha Kwo Ling Kaolin Mine, Tuen Mun Areas 40 & 46, Kwu Tung South and Tseung Kwan O Area 137

1 Metropolitan Business Core

2 Strategic Growth Areas

3 Development Axes

Conservation Areas

Overall Approach

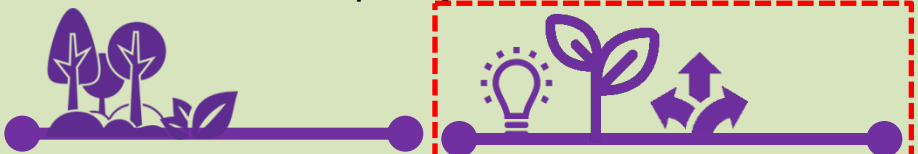
- An enhanced strategic planning approach embracing creation of development and environmental capacity, alongside managing and minimising the demand for resources and infrastructure

Development Capacity

Creating Development Space

Enhancing Supporting Transport and Infrastructure

Environmental Capacity*



Creating, Enhancing and Regenerating Environmental Capacity

A Smart, Green and Resilient City Strategy

*The ability of the physical environment to sustain human activities and biodiversity

- Create sufficient and timely capacity with buffers to meet various social and economic development needs. Avoid land and infrastructure provision posing major bottlenecks for development as at present
- Implementation of individual projects will continue to be evaluated in accordance with established mechanisms, taking into account cost-effectiveness and resource priority

A Smart, Green and Resilient City Strategy

WHAT

HONG KONG 2030+

● Utilises technology and ICT to make city more intelligent and efficient in the use of resources, resulting in cost and energy savings, improved service delivery and quality of life, and reduced environmental footprint - all supporting innovation and low-carbon economy

Source: Boyd Cohen (2012)

● Lessens environmental impact and carbon footprint while not compromising development capacity

Source: Scientific America (2009)

● United Nations: Reduces damages and risks from disaster and able to bounce back to stable state

Source: United Nations (2016)

A Smart, Green and Resilient City Strategy

- Ultimate objectives:

Low Carbon

City Efficiency

Climatic Resilience

Quality Living

A Smart, Green and Resilient City Strategy

- A Smart, Green and Resilient City Strategy should permeate all levels, aspects and stages of city planning and development
- Smart City Blueprint for Hong Kong under preparation
- A Smart, Green and Resilient City Strategy under Hong Kong 2030+ is a component of the Smart City Blueprint

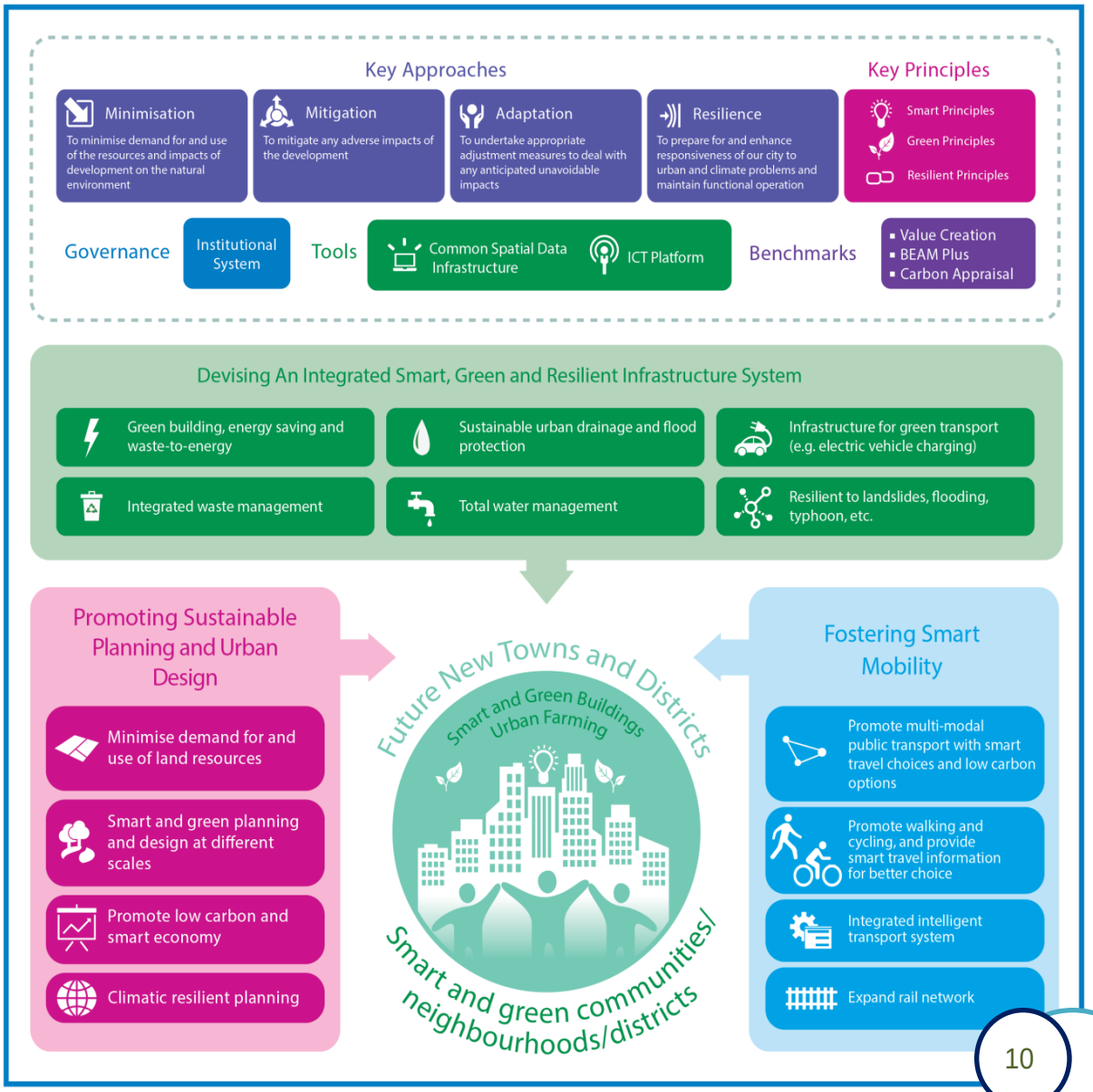
A Smart, Green and Resilient City Strategy

➢ Focus under Hong Kong 2030+: Shaping a smart, green and resilient built environment

1. Sustainable planning and urban design

2. Smart mobility

3. An integrated smart, green and resilient infrastructure system



A Smart, Green and Resilient City Strategy

1 Sustainable Planning and Urban Design

Minimise Demand for and Use of Land Resources

- Optimise use of scarce land resources (e.g. optimising density, cavern, underground space)
- Compact rail-based development

Smart and Green Design at Different Scales

- Smart living including smart homes for ageing-in-place
- Smart offices
- Smart and green districts and new towns

Promote Low Carbon and Smart Economy

- Smart production, products and services
- Land and space at strategic locations in support of innovation and technology

Promote Climate Resilient Planning

- Integrate climate change adaptation in planning, building and infrastructural design

Photo Source: iStock

My Smart HDB @ Yuhua, Singapore

Home Level

Building Level

Neighbourhood Level

District Level

- "Smart Living" in HDB Homes and estates
- Smart Home Management: allows convenience and informed decision on overall household energy and water consumption
- Smart Elderly Care: Smart Elderly Monitoring and Alert System (SEMAS) allows families and caretakers to assist elderly to age safely and independently

Photo Source: http://www.hdb.gov.sg/cs/infoweb/about-us/our-role/smart-and-sustainable-living/hdb-smart-home-exhibition

Green Office Meudon, Paris

Home Level

Building Level

Neighbourhood Level

District Level

- Positive energy office buildings
- Produces more renewable energy than it consumes

- Direct sunlight
- Photovoltaic (PV) panels at building façade and PV car shelters

- Active design with huge green walls encouraging taking stairs rather than lifts

- Centralised Energy Management System

Photo Source: http://www.green-office.fr/fr/realisations/meudon/overview

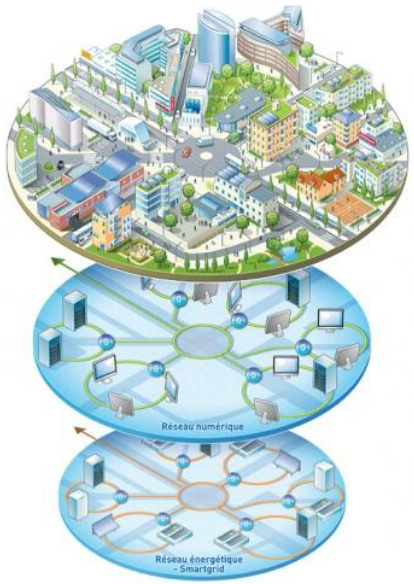
Fort d'Issy – IssyGrid, France

Home Level

Building Level

Neighbourhood Level

District Level



- First pilot project for a district-level smart grid for 2,000 homes, 5,000 inhabitants, over 160,000m^2 offices floor areas and 10,000 employees
- Pooling complementary energy needs of offices, homes and businesses, and levelling energy consumption peaks
- Smart meters to gather live data on energy consumption

Photo Source: https://www.bouygues-immobilier-corporate.com/innovation/smart-grids-eco-quartiers-intelligents-0

Fort d'Issy, France

Home Level

Building Level

Neighbourhood Level

District Level

- A new neighbourhood converted from a 12-ha former military site. 1,620 homes, 1,500m^2 of retail space and services, two schools and a nursery, a swimming pool and a museum
- Underground pneumatic household waste collection system
- Smart car sharing

Photo Source: https://www.bouygues-immobilier-corporate.com/en/content/fort-dissy

A Smart, Green and Resilient City Strategy

2 Fostering Smart Mobility

Transport Infrastructure

- Promote multi-modal public transport
- Expand rail network
- Enhance walkability
- Foster a cycle-friendly environment

Transport Management And Operation

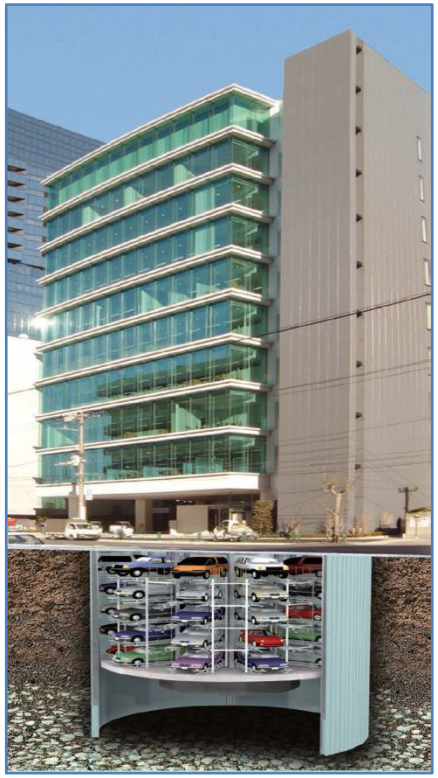
- Promote an integrated intelligent transport system
- Disseminate real time traffic information
- Promote inclusive mobility for the aged and the disadvantaged

Photo Source: iStock

Facilitating First and Last Mile - ECO-CYCLE and ECO-PARK (Tokyo, Japan)

Transport Infrastructure

Transport Management & Operation



Giken's ECO-Park System

ECO-Cycle near Shinagawa Station

- Automated high capacity underground car parking and cycle parking facilities
- Magnetic card and sensor system enables smooth operation
- Land saving, especially surface land (50 cars in 400m^2 or 200 bikes in 50m^2)

Photo Source: https://www.giken.com/en/brochures/

Integrated Intelligent Transport System - StrasMap (Strasbourg, France)

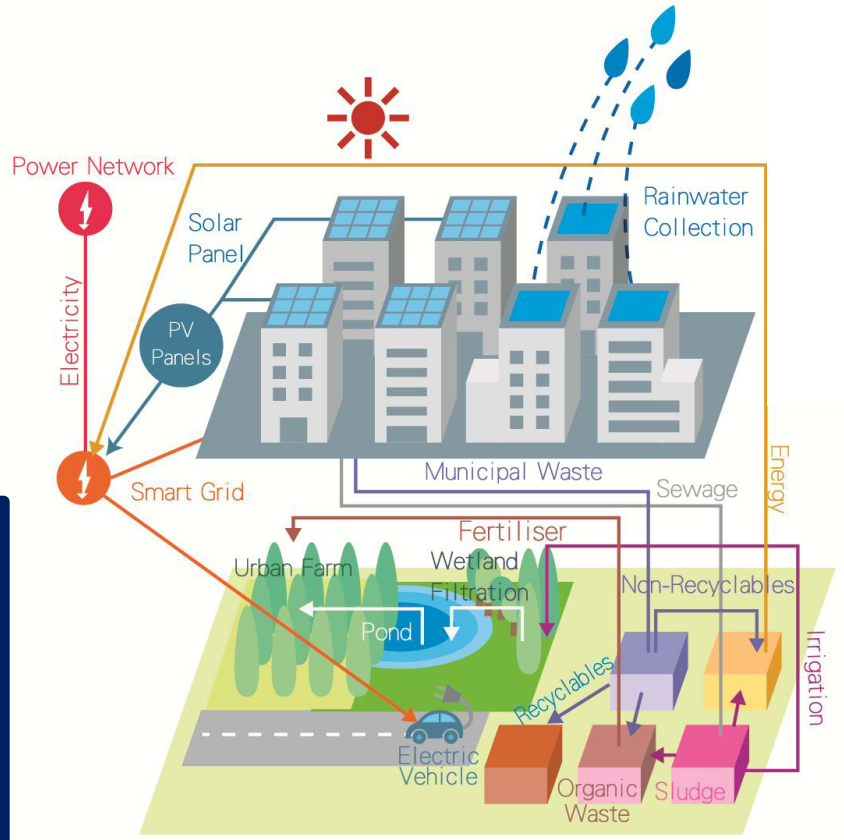
Transport Infrastructure

Transport Management & Operation

- Up-to-the-minute integrated travel news and information
- Real-time information and interactive map available online or in smart phone application

Photo Source: strasmap.eu

3 Integrated Smart, Green and Resilient Infrastructure System



A strategically planned, integrated and land efficient network of physical infrastructure

- smart grid and waste-to-energy
- refuse collection and sorting
- sewage treatment and treated sewage effluent reuse
- sustainable urban drainage
- water resources management

Integrated Smart, Green and Resilient Infrastructure System
- Musicon Stormwater Management Basin and Skate Park (Copenhagen, Denmark)

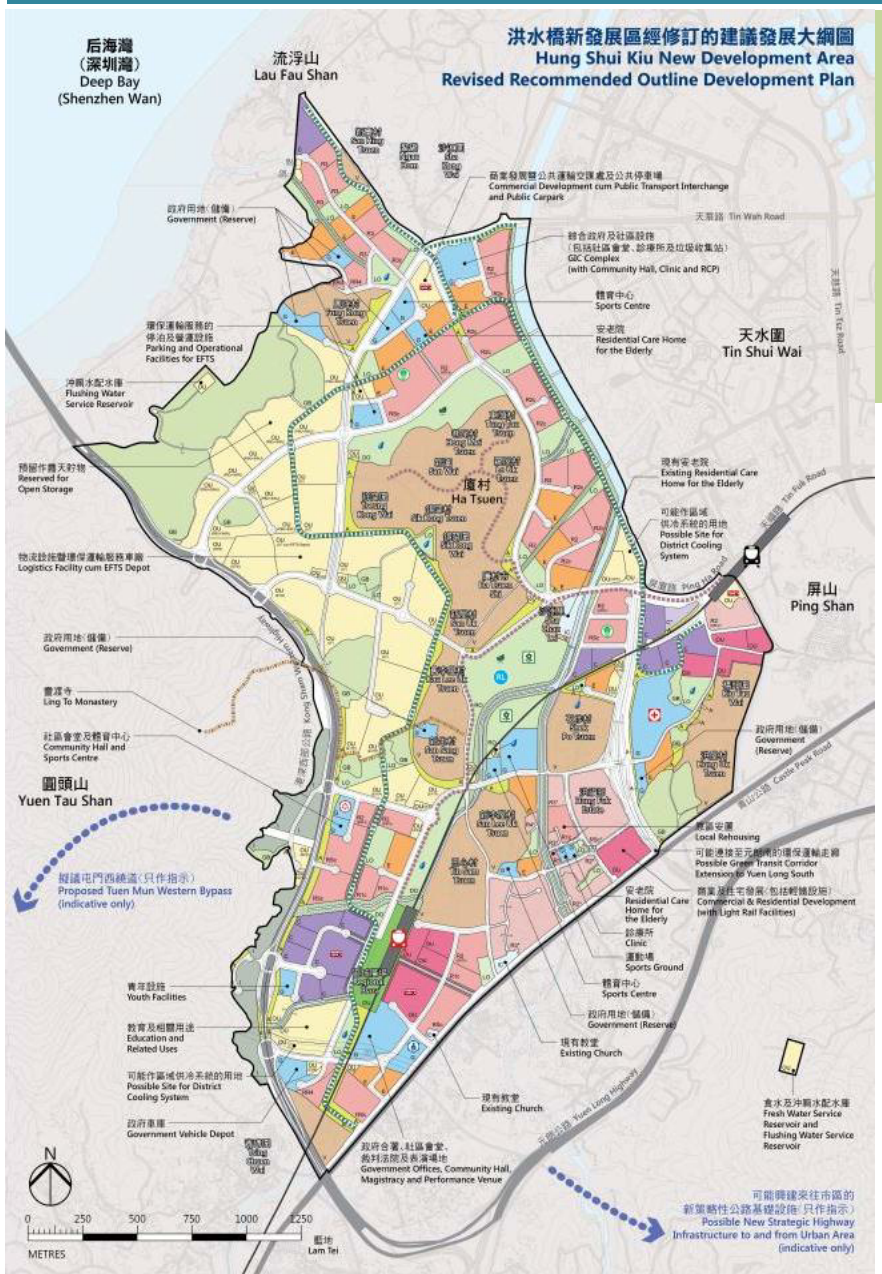
- One of the project's targets is to handle stormwater on the surface and utilise the facilities for other purposes during dry weather
- Three separate basins are used for collecting water. The third basin is designed to handle 10 year rain events - the most powerful rain events that occur statistically only every 10 year
- The entire complex can store up 23,000m^3 of water and is fully integrated into the canal system and brings rainwater to the adjacent lake

Photo Source: http://www.visitroskilde.com/ln-int/musicon-gdk619640 & http://musicon.dk/rabalderparken

PLANNING FOR THE NEXT GENERATION OF SMART, GREEN AND RESILIENT NEW TOWN IN HONG KONG

HUNG SHUI KIU NEW DEVELOPMENT AREA

Hung Shui Kiu New Development Area



NEW GENERATION NEW TOWN

A REGIONAL ECONOMIC AND CIVIC HUB fostering Hong Kong's economic growth

Revised Recommended Outline Development Plan		
New Population	About 176,000	
Total Population	About 218,000	
No. of New Flats	About 61,000	
Housing Mix (Together with TSW)	Public 51% (69%)	Private 49% (31%)
Employment	About 150,000	
Commercial	75,000	
Industry and Special Industry	61,000	
G/IC and Other Services	14,000	
Commercial Floor Area	About 2,055,000m^2	
Industrial and Special Industrial Uses Floor Area	About 4,312,000m^2	

Hung Shui Kiu New Development Area

Smart Creation of Land and Space
From Brown to Green

From Urban Sprawl to Efficient Use

Existing Brownfield Operations

Indicative Scheme

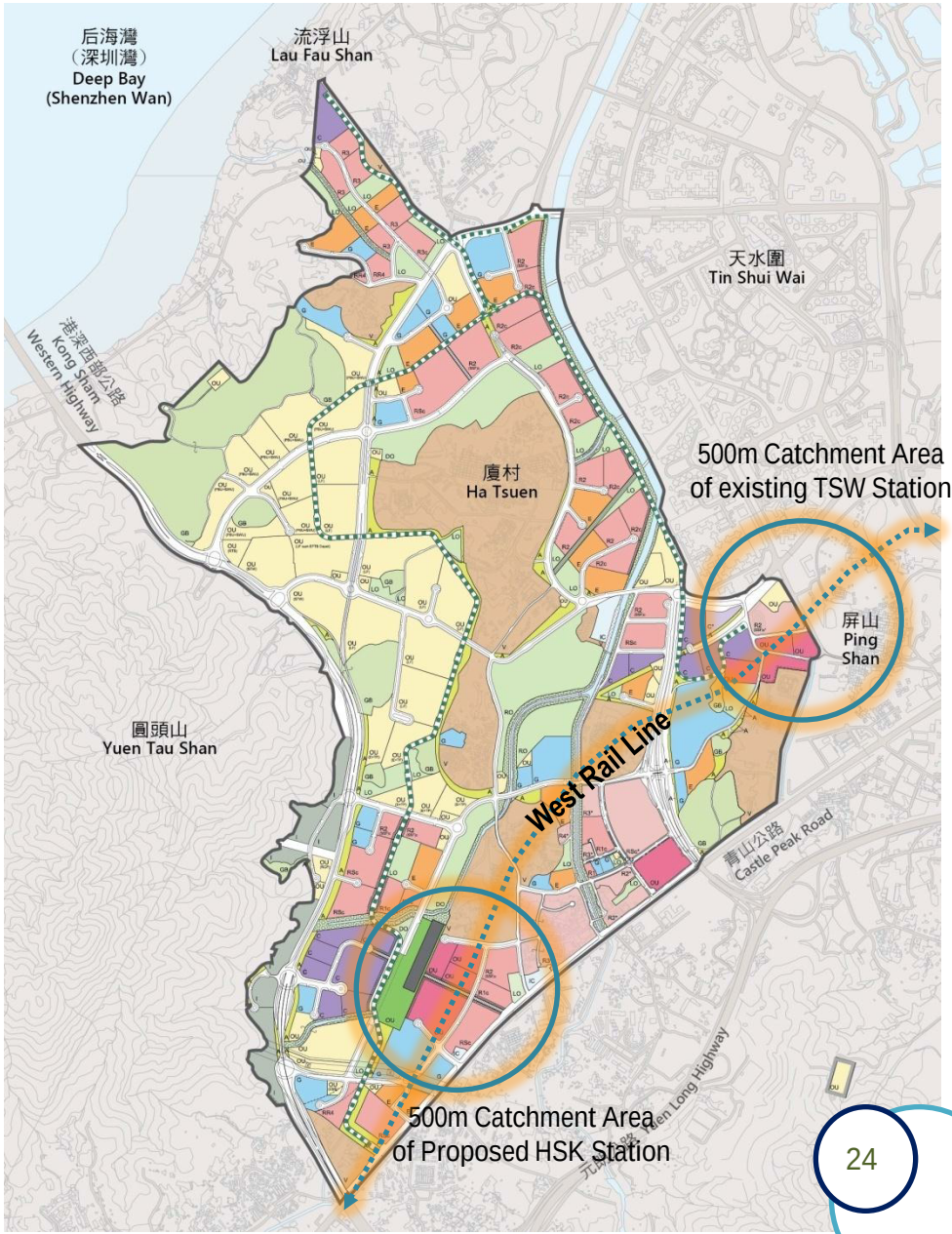
Hung Shui Kiu New Development Area

Optimisation of Use of Land

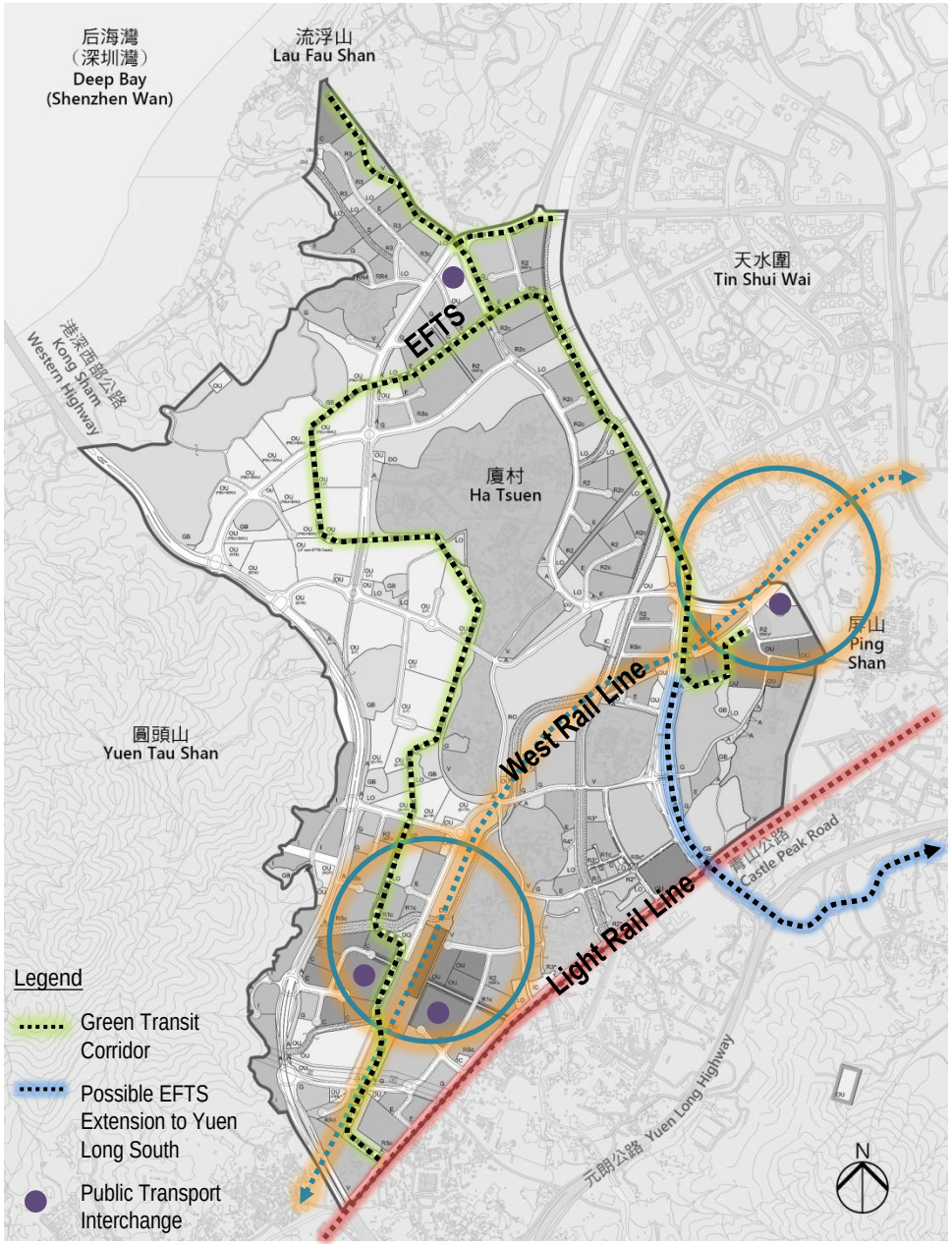
- Compact rail-based development with high-density developments concentrated around stations
- Economic and employment nodes to enhance home-job balance

Proposed HSK Station

Existing TSW Station



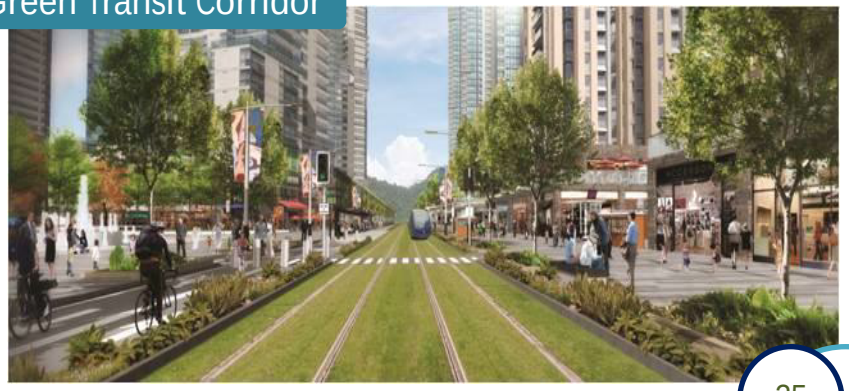
Hung Shui Kiu New Development Area



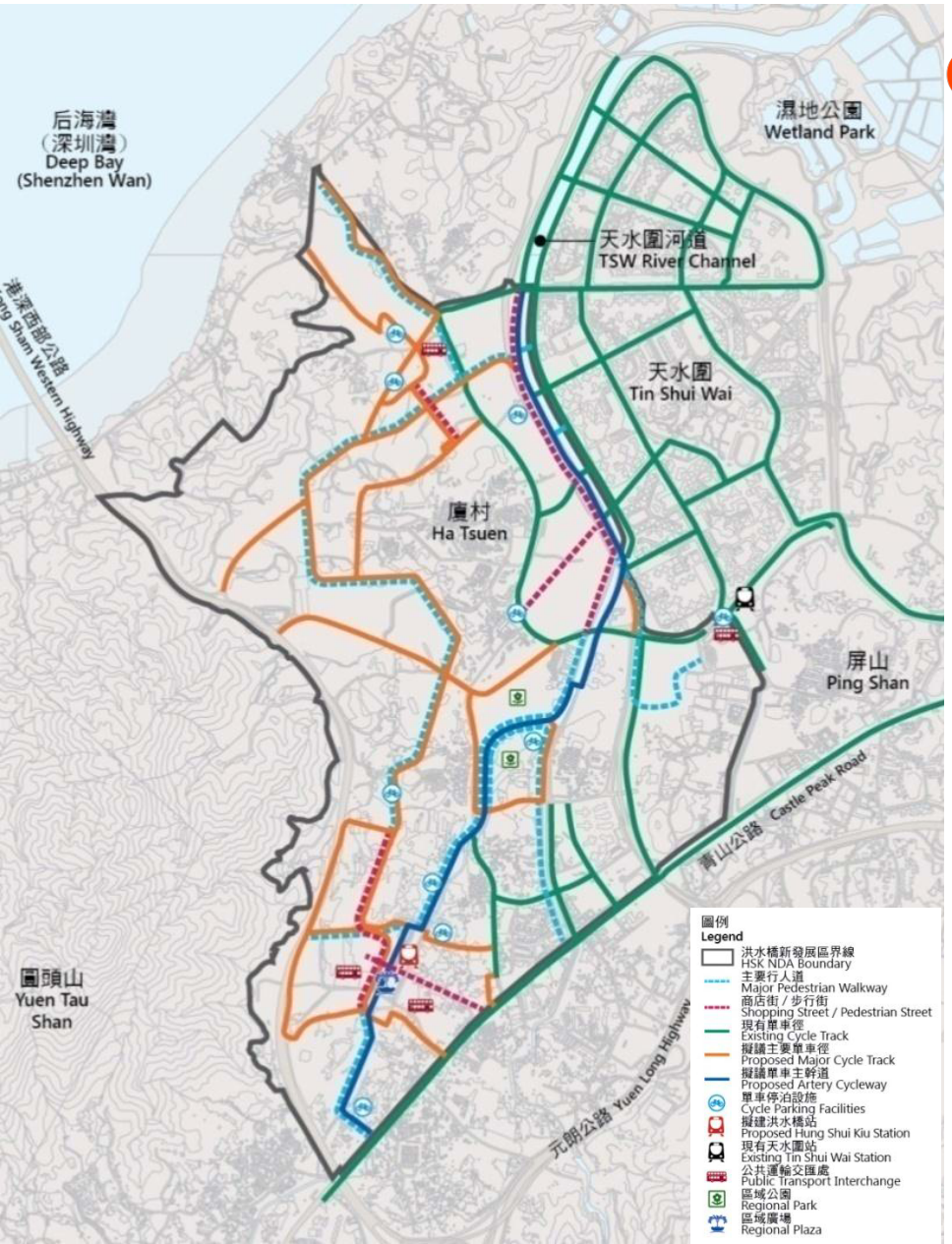
Green Mobility

- External: West Rail link with a new Hung Shui Kiu Station and existing Tin Shui Wai Station
- Internal: A Green Transit Corridor (GTC) comprising Environmental-Friendly Transport System (EFTS), walkways and cycle tracks
- About 85% of population within 500m of the railway and 200m from the EFTS/Light Rail stations
- Four planned Public Transport Interchanges facilitating multi-modal transport

Green Transit Corridor



Hung Shui Kiu New Development Area



Walkable, Cycle-Friendly and Inclusive Mobility

- Majority of population and economic activities within walking distance of mass transit and public transport nodes
- Comprehensive pedestrian and cycle track networks integrated with open space, amenity area and district nodes
- Streets with retail frontages along TSW River Channel and near HSK Station with 5 in 1 functions including Circulation, Leisure, Air ventilation, Visual Permeability and Thriving Local Economy
- Universal design and smart devices to cater for the aged and the physically impaired

Shopping Street

Hung Shui Kiu New Development Area

Integrated Smart, Green and Resilient Infrastructure System

Sustainable Urban Drainage

- Revitalise Tin Shui Wai River Channel as major green spine, breezeways and view corridors
- Flood retention lake in Regional Park and other flood retention facilities to regulate storm water

Information and Communication Technology

- Common Spatial Data Infrastructure and an Information and Communication Technology Platform to enhance city management, city operation and open data usage
- Smart homes and smart offices

Water Resource Management

- Use of treated sewage effluent and rainwater harvesting

Refuse Collection and Sorting

- Automatic refuse collection system and organic waste management facilities
- Community Green Station for environmental education and collection of recyclables

Smart Energy

- Encourage energy efficient buildings
- Explore use of district cooling system

Regional Plaza

Other Open Spaces and Amenity Area

Riverside Promenade

Regional Park

A Smart, Green and Resilient City Strategy

➢ Setting up a common spatial data infrastructure and ICT infrastructure

Common Spatial Data Infrastructure (CSDI)

-foundation for common standards, data sharing, and interactive application development for the built environment

-Study on CSDI Built Environment System

Information and Communication Technology (ICT)

-tool for intelligent, efficient use of information, resources and energy

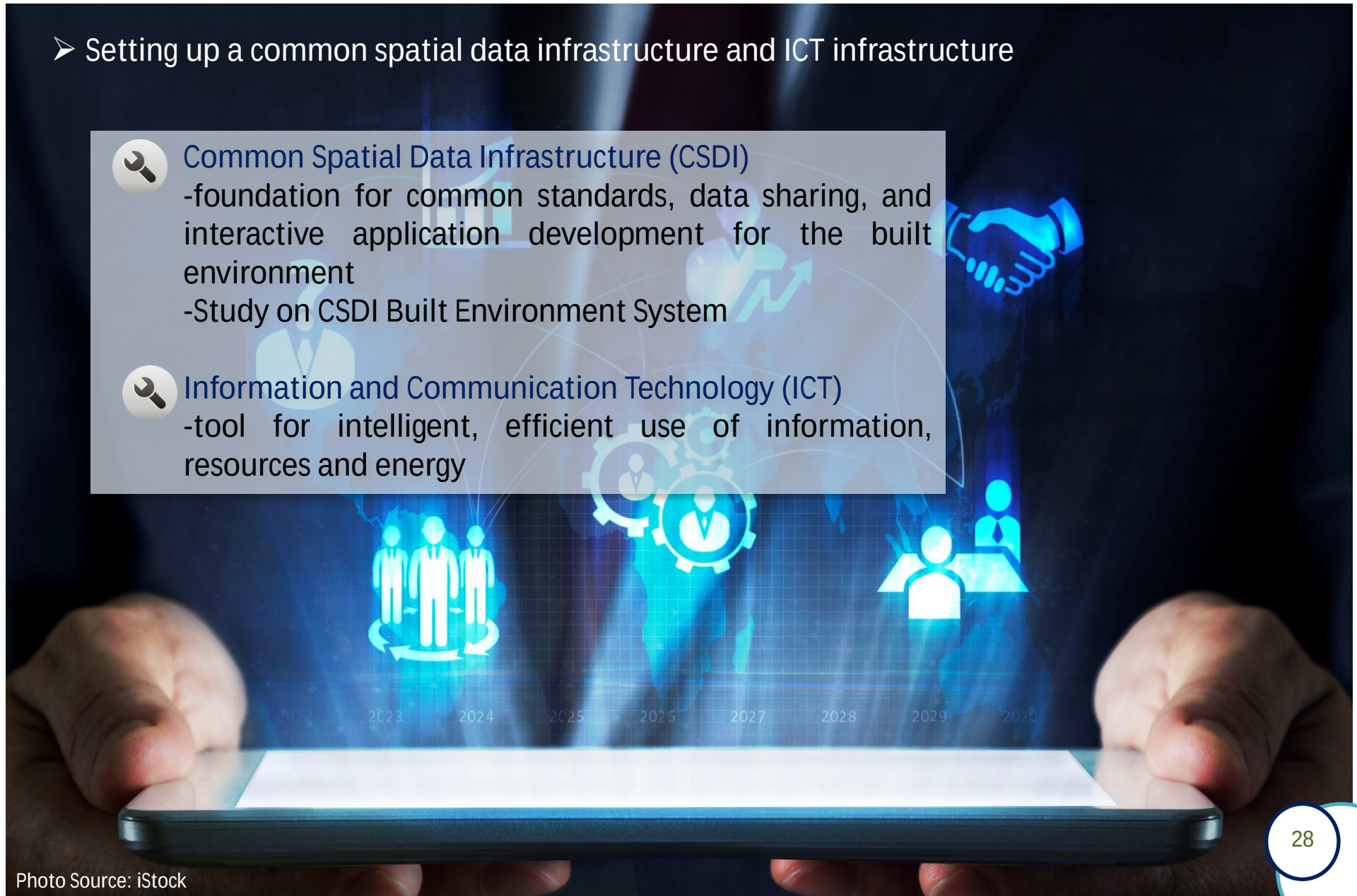
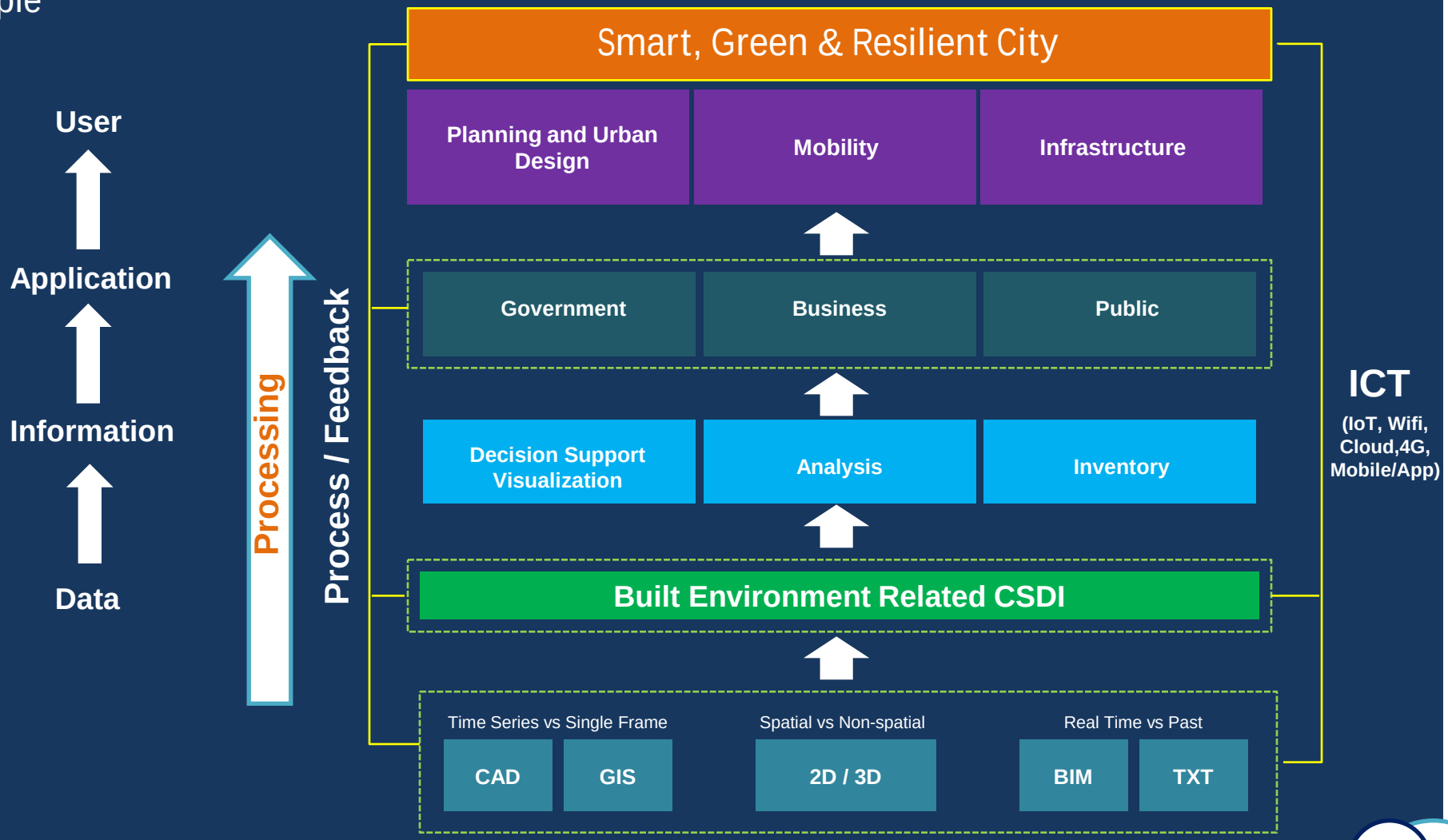


Photo Source: iStock

A Smart, Green and Resilient City Strategy

➢Ultimately, it requires the change in the mindset of all players and behavioral change of the people



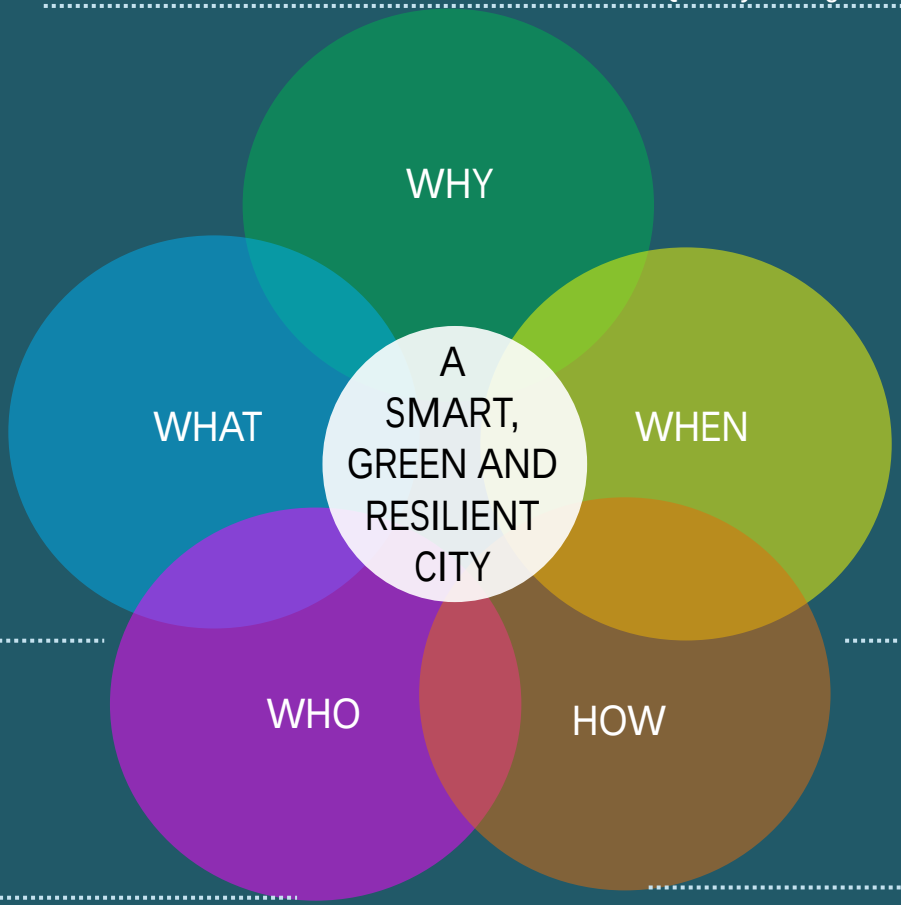
Conclusion

➢Technology and innovation will enable a new era of city development, taking care of needs of the people, environment and nature

A Smart, Green and Resilient City Strategy

- City Efficiency
- Low Carbon
- Climate Resilience
- Quality Living

- S: Utilises technology and ICT to make city more intelligent and efficient in the use of resources, resulting in cost and energy savings, improved service delivery and quality of life, and reduced environmental footprint - all supporting innovation and low-carbon economy
- G: Lessens environmental impact and carbon footprint while not compromising development capacity
- R: Reduces damages and risks from disaster and able to bounce back to stable state

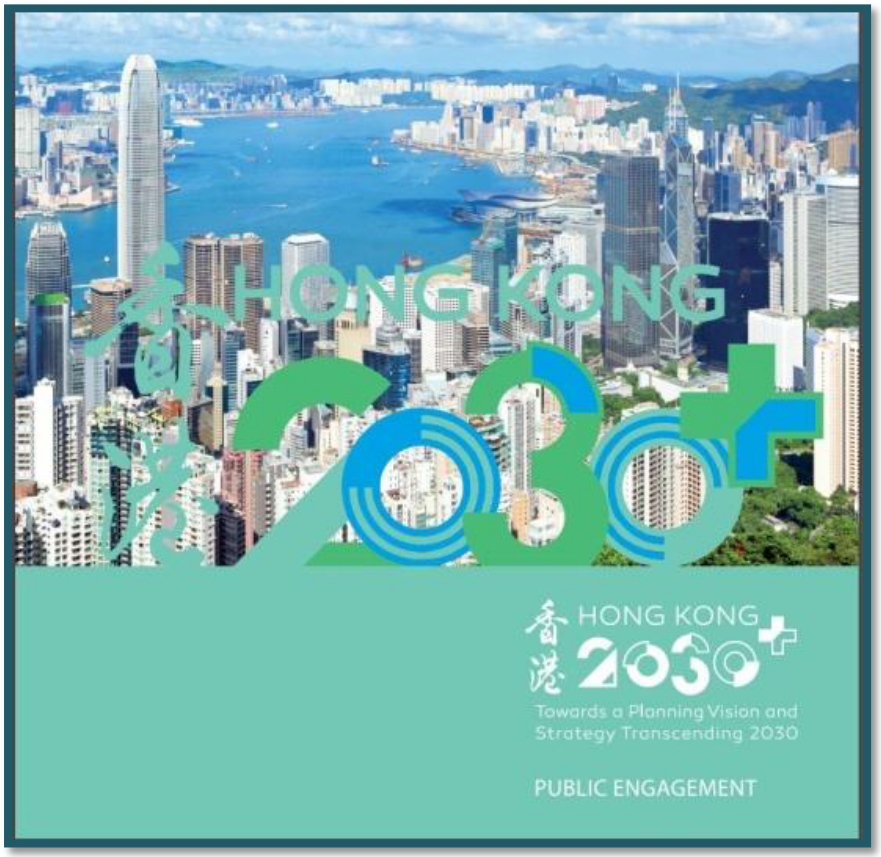


- Planning, Land and Infrastructure Development
- Detailed Design
- Construction
- Operation, Management and Maintenance

- Government
- Private / Public Bodies
- Individual

- Sustainable Planning & Urban Design
- Smart Mobility
- Integrated SGR Infrastructure
- CSDI / ICT Platform/ Big Data

Conclusion



- The Smart, Green and Resilient City Strategy under Hong Kong 2030+ is not something just desirable, it is instrumental to achieving a future-proofing city
- A Smart, Green and Resilient City Strategy as part of the overall Smart City Blueprint of the Hong Kong Government


THANK YOU