

The Hong Kong Institute of Surveyors Annual Conference 2014

Hong Kong: Our Smart City in the Next 30 Years



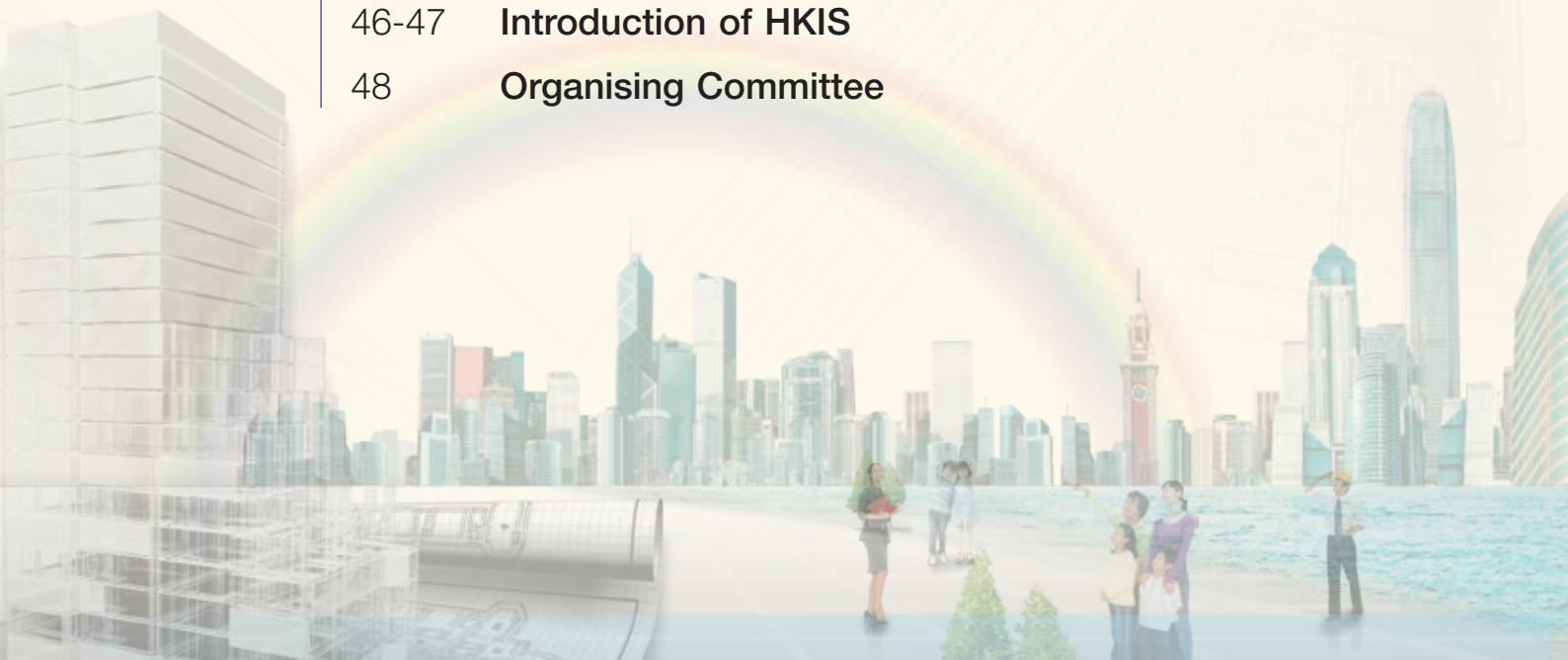
13th September 2014 (Saturday), 09:00 – 17:00
Grand Ballroom, Conrad Hong Kong, Pacific Place,
88 Queensway, Hong Kong

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Message from Guest of Honour



Mr CHAN Mo Po, Paul, MH, JP
Secretary for Development, Development Bureau
HKSAR Government

I offer my heartiest congratulations to the Hong Kong Institute of Surveyors for hosting its Annual Conference 2014 with the theme of “Hong Kong: Our Smart City in the next 30 Years”.

With a population of more than 7 million, Hong Kong is a vibrant world city that always welcomes talent from all over the world. I cannot appreciate more the importance of this conference in keeping our city's growth engine humming. This conference seeks to plan ahead and scale new heights in the next 30 years in four specific aspects: land resources, the environment, technology, and city dynamism and inspiration.

Land is the most precious ingredient in our continued prosperity. Increasing land supply tops the agenda of my bureau, and the Government has been adopting a multi-pronged strategy to increase land supply in the short, medium and long terms. Yet, when taking forward the many exciting development projects, Hong Kong must also attach great importance to city dynamism and inspiration. We are planning our city not only for our people, but also with our people. We must follow a sustainable path to conserve our environment and heritage. We are keen to adopt the newest technologies in building our city in the ways we desire, and our world-renowned high-rise cityscape speaks for our willingness to adopt the best methods available to achieve efficiency and efficacy.

Since as early as the 1920s, Hong Kong has been regularly updating its development strategy to plan ahead for socio-economic growth. The Government and the professional community must continue this effort and master the aforementioned essential aspects to deliver a quality, liveable and sustainable city.

I wish this conference every success and trust that it will serve as a constructive platform to exchange views and provide useful insights for mapping out a smart growth strategy for our present and future generations.

(Paul MP Chan)
Secretary for Development



Message from the President



The Hong Kong Institute of Surveyors Annual Conference 2014 Hong Kong: Our Smart City in the Next 30 Years

On behalf of the Hong Kong Institute of Surveyors, I would like to offer you a warm welcome to the HKIS Annual Conference 2014. I am very glad to see so many practitioners, experts and representatives from different sectors attending the conference.

2014 marks the 30th Anniversary of HKIS. Since our establishment in 1984, the Institute has made many achievements in serving the surveying industry and the community. We had 85 founding members in April 1984, now we have almost 9,000 members. Throughout the past 30 years, the Institute plays an important role in raising professional standards of the surveying profession and has received widespread recognition for the contributions to the development of Hong Kong.

The Institute organises conference every year to address the issues relating to land, property and construction. The theme of this year's conference is "Hong Kong: Our Smart City in the Next 30 Years". Through the conference, we hope to gather new insights into the future development of Hong Kong. As Hong Kong is facing a shortage of land for development and the public have an aspiration for improving the liveability of the city, the conference aims to explore how the city should be developed in the coming thirty years. The people of Hong Kong are in need of a green environment, affordable housing, convenient transportation, intelligent services, culture and heritage conservation, business opportunities and good governance. All of these areas are the important elements which contribute to the creation of a "smart city" that can provide a decent living environment to its citizens.

However, to develop Hong Kong into a smart city, we face significant challenges. To investigate potential solutions to these issues, the HKIS is pleased to provide a platform, through this conference, for experts from various fields to exchange their views. We have invited distinguished speakers to deliver talks on three main areas: first, the challenges and opportunities Hong Kong faces; second, designing and creating an environment for sustainable development and making use of advanced technologies for managing the city and improving the quality of life of its people and third, to understand the dynamics of the city and the inspirations for the future.

Throughout these years, the HKIS has made many contribution in offering its expertise and views to help formulate public policies and enactment of legislations. We are very pleased that the government has supported our conferences and events. This year, we are most honoured to have the Honourable Paul Chan Mo Po, Secretary for Development of the HKSAR Government as our Guest of Honour. He will deliver the opening keynote speech for the conference and share with us his insights for the future of Hong Kong's development.

Finally, I would like to take this opportunity to thank all our guests, speakers, moderators, sponsors and supporting organisations. Our sincere thanks also goes to the conference organizing committee led by our Vice President Sr Edward Au. I would also like to thank all the participants of the conference for your support and making the conference a wonderful and successful event.

Thank you very much.

Sr Simon KWOK Chi Wo
President, The Hong Kong Institute of Surveyors (2013-2014)



Conference Programme

Time	Program/Topic	Speaker
08:30 – 09:00	Registration	
09:00 – 09:10	Welcome Speech	Sr Simon KWOK Chi Wo <i>President</i> The Hong Kong Institute of Surveyors
09:10 – 09:40	Opening Keynote Speech	Mr CHAN Mo Po, Paul, MH, JP <i>Secretary for Development, Development Bureau</i> HKSAR Government
09:40 – 09:45	Group Photo with Guest of Honour	
09:45 – 10:10	Coffee Break	
OUR CHALLENGES AND OPPORTUNITY		
10:10 – 10:40	HK2030 Plus: a Smart Growth Strategy for Our Home	Mr LING Kar Kan, JP <i>Director of Planning, Planning Department</i> HKSAR Government
10:40 – 11:10	On Track to A Sustainable World City	Mr David TANG Chi Fai <i>Property Director</i> MTR Corporation Limited
11:10 – 11:40	Adaptive Reuse of Hong Kong's Heritage Buildings: the Good, the Bad and the Ugly	Dr LEE Ho Yin <i>Associate Professor</i> Department of Architecture, The University of Hong Kong Prof Lynne D. DISTEFANO <i>Adjunct Professor</i> Architectural Conservation Programmes (ACP), The University of Hong Kong
11:40 – 11:50	Q & A	Moderator: Sr Prof Eddie HUI Chi Man <i>Professor</i> Department of Building and Real Estate The Hong Kong Polytechnic University
11:50 – 11:55	Souvenir Presentation to Speakers and Moderator	
11:55 – 12:00	Souvenir Presentation to Sponsors	
12:00 – 13:00	Lunch	



Conference Programme

Time	Program/Topic	Speaker
ENVIRONMENT AND TECHNOLOGY		
13:00 – 13:30	Smart Cities, Smart Citizens	Ir CHAN Chi Ming, JP <i>Deputy Secretary for Development (Works), Development Bureau HKSAR Government</i>
13:30 – 14:00	Green Innovative designs for our super dense city	Dr CHAN Lai Kin <i>Director Hong Kong Architecture Centre</i>
14:00 – 14:30	Smart Cities from the Perspective of Geo-Informatics	Prof DING Xiaoli <i>Chair Professor Department of Land Surveying and Geo-Informatics The Hong Kong Polytechnic University</i>
14:30 – 14:40	Q & A	Moderator: Sr Vincent HO Kui Yip <i>Senior Vice President The Hong Kong Institute of Surveyors</i>
14:40 – 14:45	Souvenir Presentation to Speakers and Moderator	
14:45 – 15:05	Coffee Break	
CITY DYNAMIC AND INSPIRATION		
15:05 – 15:35	Land Use Dynamic in Smart City Development	Sr Hon Tony TSE Wai Chuen <i>Legislative Council Member (Architectural, Surveying and Planning) & Past President of HKIS 2003 – 04</i>
15:35 – 16:05	How Smart is our City?	Mr Michael J MOIR <i>Director of Property The Hong Kong Jockey Club</i>
16:05 – 16:35	Smart Urban Design: How we can achieve it	Dr Peter COOKSON SMITH <i>President-Elect Hong Kong Institute of Urban Design Past-President Hong Kong Institute of Planners</i>
16:35 – 16:45	Q & A	Moderator: Sr LAU Chun Kong <i>International Director Jones Lang LaSalle</i>
16:45 – 16:50	Souvenir Presentation to Speakers and Moderator	
16:50 – 17:00	Closing Remarks	Sr Edward AU Sing Hei <i>Chairman Annual Conference Organising Committee The Hong Kong Institute of Surveyors</i>
17:00	End of Conference	

Speakers and Papers



Mr LING Kar Kan, JP

Director of Planning, Planning Department
HKSAR Government

Mr K. K. LING is a professional town planner with extensive experience including planning for the new airport and the Tung Chung New Town, review of the Town Planning Ordinance, harbor-front planning and development, planning enforcement and prosecution, cross-boundary planning, and planning for new development areas.

Mr LING is the Director of Planning, heading the Planning Department of the Hong Kong Special Administrative Region Government. He is also the chairman of the Metro Planning Committee and Rural & New Town Planning Committee of the Town Planning Board.

Mr LING obtained his degree in BSSc (1st Class Honour) from the Chinese University of Hong Kong in 1980 and MSc (Urban Planning) from the University of Hong Kong in 1983. He is Fellow of the Hong Kong Institute of Planners (FHKIP), Registered Professional Planner (RPP) and with PRC Registered Urban Planner Qualification. Mr LING was the President of the Hong Kong Institute of Planners from 2007 to 2009.

Hong Kong 2030 Plus: A Smart Growth Strategy for Our Home

Mr LING Kar Kan, JP

Director of Planning, Planning Department HKSARG

Back in 2007, the Planning Department promulgated our planning vision and strategic recommendations in “Hong Kong 2030: Planning Vision and Strategy” (HK2030). We championed sustainable development with an emphasis on smart growth and resource management. In spatial terms, we advocated a development pattern centring around mass transit stations to facilitate efficient and environmentally-friendly commuting, optimising development opportunities in the existing developed areas, developing new nodes adjacent to existing new towns, and balancing between development and conservation. These planning principles are still prevailing today. They are the pre-conditions or so-called “DNA” (an acronym for “Density and Diversity”, “Nexus” and “Adaptiveness”) for Hong Kong’s smart growth.

All human activities need to be accommodated on land and the delivery of developable land takes time. Hence, planning should start early. As set out in the 2014 Policy Address, “we must plan not only for the next few years but also for the next 30 years”. This calls for a visionary planning strategy for Hong Kong transcending beyond 2030.

In this strategic planning exercise which we call it “Hong Kong 2030 Plus” (HK2030 Plus), the Planning Department will further enhance the smart growth legacy in pursuit of a sustainable Hong Kong in the further future. We will put particular emphasis on mapping out an integrated spatial strategy which is conducive to economic, social and environmental sustainability. In shaping the spatial strategy for HK2030 Plus, greater considerations will be given to promoting a smart and liveable city form which suits the context of Hong Kong with reference to the smart growth principles of harmonising development with nature and networking homes with workplaces.



HONG KONG 2030 PLUS: A SMART GROWTH STRATEGY FOR OUR HOME

Prologue

Pondering over the theme of the Conference – “Our Smart City in the Next 30 Years”, I asked myself, “what is a smart city?”

Conventionally, the concept of “smart city” is related to the utilisation of networked infrastructure, particularly the availability and quality of Information and Communication Technologies (ICTs). It has developed into a rather fuzzy concept with wider interpretation than a purely technocentric concept. Nowadays, “smart city” is becoming a fashionable concept underpinning urban performance. It is not a static concept with an end point, but more a strategy for fostering a more sustainable, liveable and resilient city capable of coping with new challenges.

An oft-cited definition of “smart city” is from the European scholars: Caragliu et al (2009) suggest that a city is smart “when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance.”

The European concept generally stresses the importance of 6 components in smart city development, namely smart economy, smart environment, smart governance, smart living, smart mobility, and smart people.

Boyd Cohen, an urban and climate strategist, has further developed a holistic tool, viz. Smart Cities Wheel, for developing and implementing smart cities strategies based on the aforementioned components (Plate 1). Last year, he published “The 10 Smartest Cities in Asia-Pacific” with Urban Business Media (UBM)’s Future Cities, and Hong Kong was ranked first. In his comparative analysis, Hong Kong performed well for indicators relating to smart mobility (mixed-modal access, prioritised clean and non-motorised options, integrated ICT); smart people (21st century education, inclusive society, embrace creativity); smart economy (local and global interconnectedness, productivity, entrepreneurship and innovation); smart environment (green urban planning, green energy, green buildings); and smart governance (ICT and e-government, transparency and open data, enabling supply and demand side policy). Yet, our scores were not so well for indicators accounting for smart living (culturally vibrant and happy, safe and healthy).

The benchmarking index shows that Hong Kong does have the traits of a smart city. Such development does not occur by coincidence. I posit that town planning is crucial to building the legacy and guiding the future evolution of smart growth in Hong Kong.

Strategic Planning Initiatives and Smart Growth

The city fabric of Hong Kong has been shaped through a long history of strategic planning initiatives (Plate 2).

Spinning off from a monocentric development pattern around the Victoria Harbour, the 1948 Abercrombie Report put forth such visionary projects as cross harbour tunnel, reclamation and new town development to resolve the urban growth issues. This can be considered as the embryo of our smart growth strategy based on cost-effectiveness in formation of developable land, enhancing connectivity through investment on strategic infrastructure, and optimising the locations of homes and jobs in selected areas.

In the 1970s, on the one hand the Government launched the Ten-year Housing Programme for new town development on the hand, and on the other hand initiated the Country Parks Programme to promote nature conservation. This is a testimonial to the balanced approach of smart growth which requires both agglomerative development and nature conservation. Instead of adopting a project-based approach, the Colony Outline Plan and Hong Kong Outline Plan in the 1970s, together with the formulation

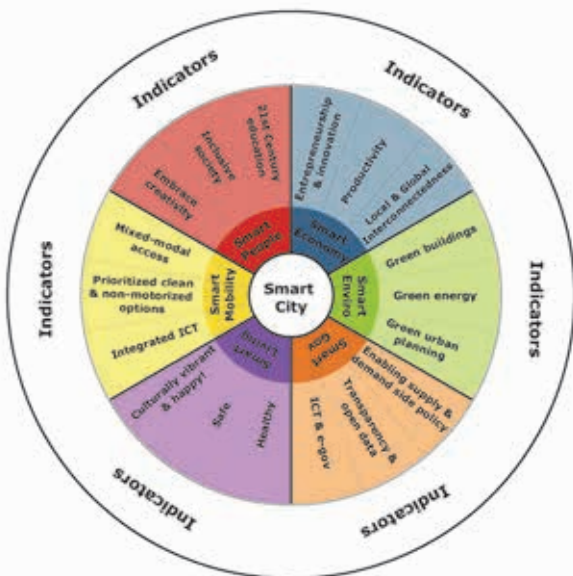


Plate 1 Smart Cities Wheel
(Adapted from: *Smart Cities Wheel*, Boyd Cohen, 2013)



Mr LING Kar Kan, JP



Plate 2 Major Strategic Planning Initiatives in Hong Kong

of planning standards and guidelines, have set out more comprehensive territorial plans incorporating both economic and social considerations to help build our economy and social capital.

Straddling the 1980s and 1990s, our strategic planning initiatives have further incorporated the environmental considerations. Notably, the Territorial Development Strategy (TDS) and its Review (TDSR) promulgated in 1984 and 1996 respectively have explicitly forged a strategy for urban growth and conservation of rural and marine areas of high landscape and environmental value. To be environmentally accountable, TDSR has pioneered the application of environmental baseline and impact assessment in strategic land use planning. For urban growth, an integrated land use-transport-environment planning framework has been laid down. Since then, railways have been serving as the backbone of our public transport system and urban development, thereby promoting an environmentally friendly, compact and hierarchical urban form with higher development density around the rail stations and descending further away. Since TDSR, strategic planning has also transcended from a purely local perspective to a wider horizon by making closer reference to the Pearl River Delta (PRD) development. In addition, we have started conceptualising

the notion of a sustainable development system, paving the way for a shift of our planning paradigm to sustainable development in the 2000s.

In 2007, the Development Bureau and Planning Department jointly promulgated “Hong Kong 2030: Planning Vision and Strategy” (HK2030). We championed sustainability, a tripod comprising economic, social and environment sustainability, as the overarching planning principle (Plate 3).



Plate 3 The Sustainability Tripod



HONG KONG 2030 PLUS: A SMART GROWTH STRATEGY FOR OUR HOME

HK2030 put an emphasis on smart growth and wise management of resources, as succinctly encapsulated in the notion of “doing more with less”. In spatial terms, we avoided the “no-go areas” which are environmentally and ecologically sensitive, continued to leverage on a rail-based development pattern, optimise development opportunities in the urban areas and existing new towns, develop new nodes adjacent to existing new towns and new development areas (NDAs), and balance between development and conservation. Specific measures were proposed under three broad development directions: providing a quality living environment, enhancing economic competitiveness, and strengthening links with the world, particularly the PRD region.

To promote a quality living environment, measures pertaining to strengthening the local character and identity, respecting the heritage and cultural characteristics, cherishing the natural endowment, smart use of space and built fabric, encouraging recycling of land and buildings, etc were proposed.

To enhance economic competitiveness, it focused on such themes as reinforcing our hub functions, revitalising urban and rural areas to foster development of small businesses and creative enterprises, and providing an environment conducive to human capital development.

To strengthen links with the world and the region, major themes were, inter alia, strengthening physical links, capitalising on the strategic locational advantages of boundary areas, global and regional networking to facilitate information exchange, and conducting regional studies to aid regional infrastructure planning.

The above are all weaved into our smart growth development fabric, and remain valid today. Through the enduring and concerted efforts of both the Government and society, Hong Kong is clearly endowed with the “DNA” for smart growth.

The DNA for Smart Growth

“DNA” is an acronym for “Density and Diversity”, “Nexus” and “Adaptiveness”. I first talked about the “DNA” notion of Hong Kong urbanism at the Chinese University of Hong Kong (CUHK)’s Inter-University Seminar on Asia Megacities held in August 2013. As the “DNA” notion is also applicable to the topic of smart city growth, I have modified the relevant parts of my unpublished CUHK’s speech in writing this article. “DNA” is in fact the set of planning principles which fosters smart growth in Hong Kong.

“D” for “Density” and “Diversity”

The first dimension of “D” is “Density”. By virtue of concentrating people and activities, high density living within a compact city is often believed to be a hotbed for innovation as well as a more sustainable mode of urban development. Economically, it enables agglomeration economies which make infrastructure development more viable, be it transport, internet, energy, water supply, waste disposal, services, etc. It promotes networking opportunities and face-to-face interaction for firms, entrepreneurs and service sector. Socially, the more accessible urban form helps promote social inclusion, enjoyment of public facilities, walking, and healthier living. Environmentally, it helps reduce motorised travels and hence, transport-related energy use and carbon emission. It also helps contain urban sprawl and preserve the natural environment.

Hong Kong is an archetype compact city. The mountainous topography makes up about half of our total land area, leaving limited developable land at our disposal. In terms of population density, Hong Kong is one of the most densely populated cities in the world. The land population density as at mid-2013 stood at 6,650 persons per km². Yet, “high density development” would not equate to “smart development” without good planning. It could incur challenges such as overcrowding and congestion, poor air ventilation and urban heat island effect. To promote smart development, the Planning Department has been formulating and updating relevant guidelines such as the Hong Kong Planning Standards and Guidelines (HKPSG) on residential densities, urban design, air ventilation, etc. These are not a one-off approach, and we are constantly monitoring our urban built environment to find ways to promote sustainability. Through this robust process, we recognise our challenges, understand them based on study evidence, and act to remediate or improve the situations.

We also take on a proactive approach to shape a sustainable urbanisation pattern by adopting an integrated land use-transport-environment planning framework. We sow the seeds of smart growth principles by giving priority to the use of railway; designating major activity nodes within 500m walking distance from the railway stations or public transport interchanges; connecting the nodes and facilities by comprehensive pedestrian walkway networks; and giving due consideration to the need for environment mitigation measures to help reduce the environmental problems caused by high density and compact urban fabric.



Mr LING Kar Kan, JP

Another dimension of “D” is “Diversity”. Our city is characterised by diverse and mixed development which promotes different lifestyles, choices, efficiency, convenience, and shared use of facilities. Both horizontally and vertically, our urban fabric is well integrated with grade separated transport and pedestrian networks. Together with the robust zoning and planning permission mechanism, mixed land uses are enabled subject to the satisfaction of relevant regulations or planning conditions.

In addition, by concentrating our built-up areas in about a quarter of our land area, much of our land could be left as countryside which in turn promotes natural conservation and biodiversity. In fact, Hong Kong has an amazingly diverse array of flora and fauna. As noted from the website of the Agriculture, Fisheries and Conservation Department, there are more than 3,100 species of vascular plants, of which about 2,100 are native; some 50 species of mammals; over 500 species of birds; about 80 species of reptiles and more than 20 amphibian species. Insect diversity is also very high with more than 230 species of butterflies and around 115 species of dragonflies. Such natural assets also serve other purposes such as providing for recreational and educational opportunities.

“N” for “Nexus”

“N” is for “Nexus”. The dictionary meaning of “nexus” is “a connection or a series of connections and links within a particular situation or system”. Indeed, Hong Kong is a convergent point between land and sea, east and west, tradition and modernity.

Hong Kong is a leading global city, ranked third after London and New York in the “Globalization and World Cities Research Network” (GaWC) Index which benchmarks cities according to the level of integration of a city into the world city network.

Hong Kong is networked to the world by advanced telecommunications and internet infrastructure. We are one of the top internet cities identified by UBM Future Cities, and the only Asian cities within the top 10 favourable cities in the Data Centre Risk Index for successful data centre operations.

In terms of transport infrastructure, Hong Kong is well connected with the world and the region. Located at the heart of Asia, Hong Kong is within five hours’ flying time of half the world’s population. Hong Kong’s airport and port are supporting our role as an international and regional transportation and logistics hub, and we are actively

planning for their future expansion. We are also plugging in our cross-boundary infrastructure linkages with the Mainland’s high speed railway and highway networks via the Guangzhou-Shenzhen-Hong Kong Express Rail Link and the Hong Kong-Zhuhai-Macao Bridge (HZMB) respectively to enhance our connection with a wider hinterland.

For internal connectivity, the integrated land use-transport-environment planning framework has been playing a crucial role in promoting an efficient nexus of connected, accessible and walkable urban spaces.

As a result, high-density developments flourish in districts which are well served by high-capacity public transport systems such as mass transit stations or interchanges. Currently, about 75% of our commercial and office gross floor areas and 43% of our living quarters are located within 500m from a rail station. As a result of conscious public policy, Hong Kong has developed into a world city using mainly public transit for travel. We have an extremely low ratio of automobile ownership (i.e. 61 private cars per 1,000 population). Our public transport accounts for some 90% of average daily motorised trips. Only about 24% of our land area are used for built-up areas, including about 43km² or 3.9% of our land area for rail/road purposes.

The achievement of Hong Kong in establishing an efficient urban mobility system was acknowledged by the Arthur D. Little Urban Mobility Index, which assesses world cities’ mobility maturity and performance. In the latest index, Hong Kong topped the global ranking, excelling in terms of its efficient public transport network, multi-modal network, smart card penetration and low level of vehicles per capita.

Hong Kong also manages to maintain a dense network of green spaces in close proximity to the residents. Currently, over 90% of the population are living within a reachable walking distance of 400 m from a public park or open space, or a car journey time of about 10 minutes from home to the boundary of a country park. Hong Kong was rated “above average” overall in the 2011 Asian Green City Index conducted by the Economic Intelligence Unit (EIU). Taking into account the spatial characteristic of green space, Hong Kong attained the top rank in the Spatially Adjusted Liveability Index compiled by the winning entry in the 2012 competition hosted by EIU and BuzzData, though Hong Kong was only placed 31st in the conventional EIU’s 2013 Liveability Survey. All in all, the green network in Hong Kong has contributed much to boosting our performance in the liveability aspect.



HONG KONG 2030 PLUS: A SMART GROWTH STRATEGY FOR OUR HOME

“A” for “Adaptiveness”

The alphabet “A” is for “Adaptiveness”. To be adaptive, we embrace change.

The cityscape of Hong Kong is constantly adapting to the changing economic and social environment. Our economy has been restructuring from a fishing village in the mid-19th century to an entrepot, then to a manufacturing centre after the Second World War; and it is now a financial hub which we position it as Asia’s World City.

The last wave of the economic restructuring process was the moving away of manufacturing industries from Hong Kong. We are fortunate in that we have not suffered from the inner city decay problem which is a bitter experience in many other cities. Our very adaptive land use planning system has enabled transformation of many old industrial areas into vibrant business districts and residential communities.

Examples abound in Hong Kong. One recent case is our Kowloon East area, which includes the former Kai Tak Airport and the former Kwun Tong and Kowloon Bay industrial areas. Branded as “CBD2” with a focus on Connectivity, Branding, Design and Diversity, the Government is energising Kowloon East to facilitate its transformation into another premier business centre for Hong Kong to create a synergy with the Central District. The total office stock that can be developed in this CBD2 on Kowloon side is estimated to double the present stock in the Central District on Hong Kong Island. So far, initiatives have been consolidated under three versions of Conceptual Master Plans. In the latest version 3.0, new opportunities are identified for Kai Tak Fantasy; Creativity, Arts and Culture; Green Buildings; and Industrial Culture and Heritage. To add synergy to the CBD2, the Government is also launching the Kai Tak Fantasy – International Ideas Competition on Urban Planning and Design to solicit innovative ideas on turning the area into a tourism and entertainment destination.

Another vivid example of Hong Kong’s adaptive urban fabric is our Victoria Harbour, which is one of our most valuable public assets. The shore of Victoria Harbour used to be occupied by warehouses, cargo handling areas and shipyards, denying public access to the waterfront. Transformation of the harbourfront was triggered in the 1990’s by the Metroplan and is recently sped up with the tremendous effort boosted by the Harbourfront Commission. More than half of our 73km-long harbourfront have been or can be potentially transformed into vibrant promenade for the enjoyment of our people and visitors to our city.

Transcending beyond 2030

Hitherto, Hong Kong is bestowed with the “DNA” for smart growth. In order to sustain smart growth for our home, we must continue to plan strategically. As all human activities need to be accommodated on land and the delivery of developable land requires a long lead time, planning should start early.

As set out in the 2014 Policy Address, “*we must plan not only for the next few years but also for the next 30 years*”. While the broad directions set out in HK2030 still hold, the spatial planning framework will last till 2030, i.e. a remaining time span of only about 15 years from now. This calls for a visionary territory spatial development strategy for Hong Kong with a planning horizon transcending beyond 2030. In this strategic planning exercise which we called “HK2030 Plus”, the Planning Department will further enhance the smart growth legacy in pursuit of a sustainable Hong Kong in the further future. Particular emphasis will be placed on mapping out an integrated smart growth spatial strategy which is conducive to achieving economic, social and environmental sustainability.

The Changing Dynamics and Aspirations

HK2030 Plus will take into account the changing dynamics and aspirations since the promulgation of HK2030 in 2007, including latest population projections, economic outlook of a knowledge-based economy, spatial needs and demands, strategic transport and infrastructure provision, policy and development initiatives, community aspirations, global and regional development, etc.

Leveraging on our “DNA” for smart growth, we aspire to “genetically engineer” our spatial development strategy to enhancing “smart living” – the category which Hong Kong performed less satisfactorily in Boyd Cohen’s Smart Cities Wheel as mentioned in the earlier part of this article. By “smart living”, we mean a vibrant city form which promotes healthy living and well-being; more employment opportunities closer to homes; more affordable accommodation for living and doing business; more spacious activity spaces; more opportunities for leisure and recreation; more proactive management of our natural and cultural assets, etc.

Looking into the future, I would like to take this opportunity to share with the readers our initial thoughts on the smart growth spatial strategy and its shapers.

Smart Growth Spatial Strategy

In HK2030, the strategic concept plan generally comprised a metro core and different development axes (Plate 4). It should be broadly valid but some adjustments might be necessary in view of the changing circumstances and the aspiration of enhancing smart growth.

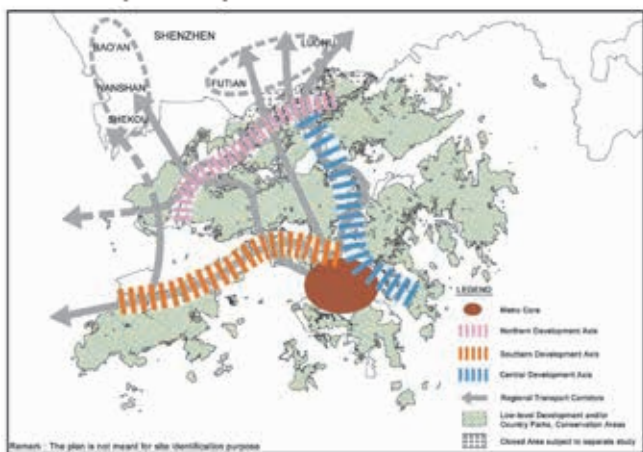


Plate 4 Strategic Concept Plan for HK2030

Taking stock of the existing urban form and possible development areas purported by the Government, the future spatial strategy could possibly entail a polycentric development pattern comprising an extended urban core, new towns and NDAs, and boundary nodes connected by strategic transport corridors.

The current urban core lies in the Metro Area with the traditional CBD (Central Business District) and Kowloon East (CBD2 – Connectivity, Branding, Design, Diversity) characterised by a concentration of financial services, advanced producer services and high-end commercial activities. Whilst the urban core will continue to be the centroid of our urban fabric, the New Territories North (NTN) and the East Lantau Metropolis (ELM) may have the potential of providing Hong Kong with the strategic long-term solution space for housing and economic development.

A well thought-out spatial development strategy cum transport network would be needed to promote a better synergy among the development nodes and axes to achieve agglomeration economy, optimise population and employment opportunities, and balance development and conservation needs. In shaping the spatial strategy for HK2030 Plus, greater considerations would be given to promoting a smart and liveable city form which suits the context of Hong Kong with reference to the smart growth

principles of harmonising development with nature and networking living with working spaces.

Harmonising Development with Nature

Past generations of new town development in Hong Kong tend to centralise urban development in a spatially confined area in the midst of rural and natural setting. Some typical cases are found in the new towns of Shatin, Tuen Mun, Tai Po, Tin Shui Wai, and Tseung Kwan O. The resultant development form has the merits of containing urbanisation and preventing urban sprawl. At the same time, it often creates a dichotomy of urban and rural landscapes.

In the urbanisation context of Hong Kong where transportation networks keep expanding and people keep aspiring for the best of both city and rural living, a gradual blurring of the urban-rural boundary is happening and will likely to persist in future.

For the next generation of development, we aspire to build quality homes for our people in a setting which harmonises development with nature. Some key facets would be:

- (a) *integrated planning with green and blue spaces:* exploring opportunities to enhance “green spaces” such as country parks, public parks, park connectors, open spaces, cycling tracks, etc; and integrating “blue spaces” such as coastlines, waterfront, reservoirs, lakes, rivers, drains, swimming pools, urban water features, etc into territory-wide as well as neighbourhood planning. All these would help create a more liveable environment which fosters healthy living and well-being, and provides more spacious activity spaces opportunities for leisure and recreation.
- (b) *urban-rural integration:* blending urban and rural landscapes and activities with the preservation of active agricultural land as far as practicable; promoting agriculture and greening in both urban and peri-urban context; and exploring the beneficial rural uses such as eco-tourism. A good start is seen in our planning initiatives to facilitate agricultural rehabilitation and rural conservation in planning for the North East New Territories NDAs through designation of Long Valley as a nature park and also protecting large tract of its adjoining agricultural land as part and parcel of the new town development package. The planning study for the NTN should further explore the possibility of achieving an organic urban-rural integration in our future new town development;



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(c) *urban design framework*: refining our urban design framework having regard to the unique city form of Hong Kong – cityscape, ridgeline and coastline, urban climatic considerations, cultural, heritage and nature conservation, public space, etc. It will complement our planning strategy of making Hong Kong a more livable and sustainable compact city; and

(d) *smart, green and resilient initiatives*: in planning for the new strategic growth areas, it would be opportune to incorporate smart, green and resilient initiatives to make them more liveable. These could be in the form of using cutting edge technology to reduce carbon emission, urban heat island effect, waste generation and water consumption; wider use of ICT for better planning, land use management and enhancing city resilience; green transportation; sustainable infrastructure for water supply, drainage, sewerage including total water management and conservation, rainwater harvesting and recycling, nullah rehabilitation; provision of new waste minimisation/collection/recycling facilities; etc.

Networking Homes with Workplaces

Hong Kong is not only facing the challenge of land shortage, we have also an imbalance development pattern in terms of homes and workplaces. Notwithstanding that our new town development has raised the share of our New Territories population to about 41% (excluding Tsuen Wan and Kwai Tsing), only 23% of our employment is provided in the same area. The majority of the employment opportunities are still bundling in the urban core. The lopsided situation could engender issues such as congestion of key commuting corridors, long work journeys, less family and leisure time, low productivity, etc. A smart solution to these issues is needed.

In the HK2030 Plus, employment would be elevated as an integral consideration of the strategic planning framework, in addition to the long-established integrated land use-transport-environment planning framework. We are striving for a more balanced development pattern whereby more employment opportunities would be decentralised to the extended urban core, new towns, NDAs, and boundary nodes. We are exploring opportunities to bring jobs closer to homes by strategically locating and branding employment clusters. The revamped framework is already in place in planning for our CBD2 and CBD3, NDAs, and boundary nodes.

For example, the ELM is identified as our potential CBD3. With the planning principles of Connectivity, Branding, Design, Diversity and Innovation Development, this possible future metropolis may have excellent potential of becoming a producer services hub with locational edge near the airport and HZMB, complementing the new nodes in such NDAs as Kwu Tung North and Hung Shui Kiu as well as the higher education and culture and creative industry node at Lok Ma Chau Loop.

As people are mobile and free to choose their jobs and employment locations, it is often important to provide them with an enabling commuting and job environment instead of planning for a self-contained community as suggested in the traditional new town concept. We will continue to network homes and workplaces with efficient, convenient and pleasant transport and walking facilities as well as commuting services. Opportunities will be further explored to facilitate home-based employment, shared working space, business centres near homes, and workplaces for boosting innovation and creativity.

Epilogue

At the outset of this article, I posed the question: “what is a smart city?” From a planning perspective, a smart growth strategy for Hong Kong must go beyond the realm of technological development. It shall be a holistic strategy for fostering a more sustainable, liveable and resilient city.

Quoting from Steve Jobs, “Technology is nothing. What’s important is that you have a faith in people, that they’re basically good and smart, and if you give them tools, they’ll do wonderful things with them.”

What Steve Jobs is saying is that tools are just tools and it is not the tools that you have faith in. It is people you have faith in or not.

Bestowed with the wisdom of our long history of strategic planning legacy and with the “DNAs” (Density & Diversity, Nexus and Adaptiveness) for smart growth, Hong Kong has great potential in further promoting smart growth. I trust that with the collaboration of our people, in particular the planning, surveying, engineering, architectural, urban design and landscaping professionals, we could leverage on town planning tools to sustain smart growth in Hong Kong. To take forward HK2030 Plus, a smart and liveable city is now in the making.

Acknowledgement

The author would like to express his appreciation to his colleague, Ms. Margaret H.Y. Chan, for her assistance in preparing the article.

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Speakers and Papers



Mr David TANG Chi Fai
Property Director
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David TANG Chi-fai 49, has been the Property Director and a Member of the Executive Directorate of MTR Corporation Ltd in Hong Kong (MTR) since 1 October 2011. Mr TANG joined MTR in 2004. He is responsible for all of the property development projects of the Company in Hong Kong from layout planning, scheme design through to project construction completion, as well as asset and leasing management of all of the investment properties (including shopping malls and offices) and property management of office buildings and residential units. During his service with MTR, he held senior management positions in the Legal and Procurement Division, and the China and International Business Division before he was transferred to Property Division in 2009. Mr TANG is a Chartered Surveyor and a member of the Royal Institution of Chartered Surveyors and the Hong Kong Institute of Surveyors.

On Track to a Sustainable World City

Mr David TANG Chi Fai

Property Director, MTR Corporation Limited

1.0 Cities in the 21st Century

Future of Cities

In the face of unprecedented global urbanisation, thoughtful town planning is more important now than ever before. The United Nations reported over half of the world's population currently reside in urban areas and is projected to grow to nearly 70% – over 6.25 billion people – by 2050.¹ While millions of rural residents flock to urban areas seeking economic opportunity, a critical question must be answered: how can cities sustainably accommodate this scale of growth? A key solution is investment in high-quality, modern infrastructure.

Role of the Railway

Fundamental to the long-term sustainability of any growing metropolitan economy is the ability to effectively transport people in the city. Railway systems have the advantage of efficiently moving masses of people, safely and in an environmentally-friendly manner. Many city governments around the world are developing mass transit railway networks to support the economic and urban growth. These governments are sending a clear message: urban rail transport is essential to the future of their cities. But what should the role of railway lines be in the future sustainable cities? Are they just to serve the transport function alone, or more?

¹ United Nations, Department of Economic and Social Affairs, Population Division: *World Urbanization Prospects, the 2011 Revision: Highlights*. New York, 2012



2.0 Hong Kong's Experience: Rail + Property = Sustainability

Railway and Property Integration

In the past 35 years since the opening of the first MTR line in 1979, Hong Kong has come to realise that railway is not just a transport facility but also a means to restructure the city. In the existing MTR network, half of the 84 stations are integrated with property developments, ranging from small to very large in scale, such as Kowloon Station, Tung Chung or LOHAS Park (see Figure 1). Each new railway extension has since become a new development corridor, and communities grow around the new stations.

Rail + Property Model

The mechanism the MTR Corporation uses to achieve this is known as the "Rail + Property" model, or "R+P" model in short. In this model, Hong Kong Government grants development rights of land above or adjacent to the stations to MTR to help fill the funding gap of new rail projects instead of injecting cash or providing direct subsidies. The development rights are not given to MTR free of costs, but at the land premium assessed on green-field principle assuming no presence of rail. Through this, the Corporation is able to help fund the rail by capturing the incremental value the rail has itself created. The development of property supports the financing of rail construction, operations and maintenance without requiring government subsidy or burdening the tax payer.

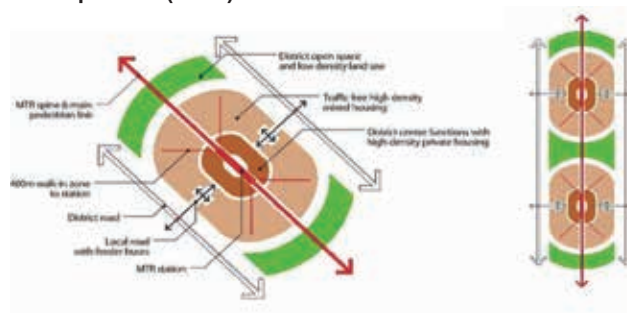
Figure 1 MTR System and Properties



Over the years, the R+P model has evolved from a source of financing to strategies for comprehensive developments, in partnership with Government and private developers. This unique business strategy enables high-quality developments integrated with the railway facilities and ensures long-term sustainability, not only for the rail business, but also for the city of Hong Kong.

In urban development, R+P model promotes a unique form of transit-oriented development (TOD, see Figure 2) in which the MTR Corporation works in collaboration with private and public sectors to seek opportunities to create vertically and horizontally integrated communities above stations that foster synergy between public transit and the spaces in which people live, work, shop and play.

Figure 2 "R+P" Supports Transit Oriented Development (TOD)



Building Rail-Based Integrated Community

Through rail construction and integrated property development, a wide range of housing and business communities that help to meet current and future needs have been established, supporting the long-term sustainability of Hong Kong. This strategy has enabled the city to go up, not out, confining development only to the city's 25% land area, effectively protecting our countryside from the impacts of urban sprawl. More usage of the rail and less reliance on road transport means a better connected society and a more liveable environment.

3.0 Community Building

Since the 1990s, MTR has leveraged new rail lines to support the building of sustainable communities. As the R+P model has evolved, it has grown into a sophisticated tool for building dynamic urban environments and well-connected communities. These place-making efforts are rooted in two core elements: seamless integration and comprehensive planning.

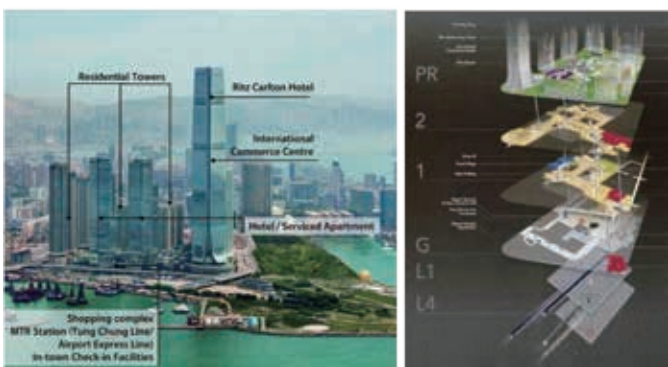


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Seamless Integration

Station area development has become a multi-disciplined exercise in maximising vertical and horizontal integration. Along each new rail line, compact, pedestrian friendly communities are developed. Buildings and open spaces are connected to the station through series of indoor and outdoor pedestrian corridors, providing seamless access and promoting convenience and efficiency for visitors, residents and workers.

Kowloon Station Development, completed in 2010, is a 1.1 million square meter development constructed on reclaimed land. Opening in several phases, the development includes a mix of commercial, residential, and hospitality with the iconic 118-storey office/hotel tower, International Commerce Centre (ICC), and regional shopping mall/ entertainment complex, Elements. The MTR Tung Chung lines and Airport Express Line are both accessible in the station area in the lower levels.



The station is seamlessly integrated with development above and adjacent, with easy access to residential, commercial, retail, and civic uses directly from the train exit.

Dynamic Communities

When the TOD planning concept is applied locally, a “people-centric” approach is adopted in the detailed planning and design of each integrated development. The station is no longer an area where people quickly come and go. It becomes the focus of a growing community where people can live, work, shop, relax and have fun.

Tseung Kwan O Station Development, completed in 2011, sits at the heart of Tseung Kwan O New Town. The development encompasses a mixed-use railway integrated development complex with 6 residential towers, 2 hotels, offices and a shopping mall “PopCorn”. With good connectivity and generous provision of public space, it has become the activity centre of the new town, vibrant both day and night, throughout the week. Measures introduced include a highly functional public space “Civic Square”, an elevated park, barrier-free access and connected walkways to neighbouring developments.





Mr David TANG Chi Fai



LOHAS Park is MTR's largest housing development built above the railway depot of Tseung Kwan O Line and its terminal station. It is physically integrated with a shopping and entertainment complex and a wide array of community facilities. The development is a township housing 58,000 people in 21,500 units. Approximately one-third of the total 50 towers are currently completed. This development has provided high-quality homes with all needed supporting

facilities in a liveable community. It is well-connected via transit to primary areas of employment, and provides residents with significant access to parks and open space, well above the current design standards.



The seamless synthesis of various land uses in integrated rail and property projects attracts different users throughout the day, week, and year. These uses and users help to activate communities, which in turn creates a safer and more vibrant neighbourhood. Be it commercial or residential, the MTR approach to transit-oriented development and place-making continues building Hong Kong towards a more sustainable future.

4.0 Towards a Sustainable World City

R+P development implemented by the MTR goes much beyond that of sustaining a railway business, but proactively contributes to improving the urban environment and living condition for today's and tomorrow's Hong Kong people. Beyond the economic benefits to the community, there are numerous social and environmental benefits that result from comprehensive land use planning and rail-property synergy.

In MTR's short history of 35 years, the R+P model has proven to work well for Hong Kong. At this moment, five railway projects are actively under construction, adding some 56 km to the existing network of 218 km. Among these five lines, the R+P model is adopted for South Island Line (East) from Admiralty to South Horizons and Kwun Tong Line Extension from Yau Ma Tei to Whompoa, both with target opening in 2016.

For South Island Line (East), a new commercial/residential complex will be built on the 7.1 ha Wong Chuk Hang Station/Depot site to provide 357,500 square metres of residential GFA (about 4,700 units), a district shopping mall of 47,000 square metres GFA, various community



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facilities and open space for public enjoyment. This integrated development will serve the entire Hong Kong Island South and is expected to act as a catalyst for the regeneration of the old Wong Chuk Hang industrial area into a modern business district.

Above the future Ho Man Tin Station on Kwun Tong Line Extension, a new residential community fully integrated with the station and conveniently connected to neighbouring areas will be established on the 2.6 ha station site to provide 128,400 square metres residential GFA (about 1,400 – 1,800 units). The development will introduce a facelift to the area and add momentum to the urban renewal process now taking place in the nearby Hung Hom District.

With thoughtful consideration to the relationship between land uses, connectivity and accessibility, the R+P projects already built, under construction and being planned will help to foster a rail-based lifestyle when rail becomes part of people's daily life, moving the city towards more sustainable urban living in the years to come.

Speakers and Papers



Dr LEE Ho Yin

Associate Professor

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Dr LEE Ho Yin, one of the three founders of the HKU Architectural Conservation Programmes (ACP), is the third and current Director of the programme, a post he held since 2006. Before joining HKU in 2000, he was the Associate Director of a Hong Kong architectural practice. Besides teaching at HKU, he is also an experienced architectural conservationist, having involved in many conservation projects in Hong Kong, Mainland China and overseas. In 2002, he was a member of a team commissioned by the World Bank to work with the Shaoxing People's Government on the conservation planning of the historic water town of Shaoxing. From 2009 to 2012, he was twice appointed as a member of the Antiquities Advisory Board by the Hong Kong SAR Government. In 2010, he was appointed by the Haikou Municipal Government of the Hainan Province as an advising expert for the city's historic district of shophouse streets, as well as commissioned by the Singapore Government as a consultant to help set up the country's Tentative World Heritage List. In 2011, he led the expert consultant team in writing the Hong Kong Government-commissioned architectural appraisal report for the process of declaring Ho Tung Garden as a statutory Monument.



Prof Lynne D. DISTEFANO

Adjunct Professor

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Prof. Lynne DISTEFANO was one of the three founders of the HKU Architectural Conservation Programmes (ACP), and she served as the second Director of ACP from 2003-2005. She was previously a tenured associate professor at the University of Western Ontario, as well as Chief Curator of Museum London in Ontario, Canada. She has been extensively involved with UNESCO's efforts in heritage conservation. In 2001, she was invited through UNESCO by the Mayor's Office of Vigan City in the Philippines as an advisor to the conservation masterplan of the Vigan World Heritage Site. From 2008 to 2009, she was appointed by the International Council on Monuments and Sites (ICOMOS) as one of four World Heritage Advisors to carry out preliminary assessment of World Heritage applications. Since 2006, she has been appointed by ICOMOS as an official evaluator for a number of nominated World Heritage Sites in China, Japan and South Korea, as well as an expert for several reactive monitoring missions in China, Laos and the Philippines.



Dr LEE Ho Yin / Prof Lynne D. DISTEFANO

Purposeful Repurposing: Adaptive Reuse of Hong Kong's Heritage Buildings

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Abstract

2007 was the year when the Chief Executive of the Hong Kong Special Administrative Region announced Hong Kong's first ever Conservation Policy in his annual Policy Address. In eight paragraphs, the longest ever on the agenda of heritage conservation, the detailed policies laid down a roadmap of how conservation in Hong Kong would be carried out. In particular, paragraph 51 states that "revitalisation, rather than preservation alone, should be pursued to maximise the economic and social benefits of historic buildings." This paper explores the concept of "revitalisation," the Hong Kong terminology for an approach in conservation that is more commonly referred to, worldwide, as "adaptive reuse." As "adaptive reuse" becomes an increasingly relevant approach to the conservation of heritage buildings, the term has morphed into more creative variations, such as "constructive conservation" by English Heritage (2008). In Hong Kong, "revitalisation" began life in 2008 under the Revitalisation Scheme, an initiative that is part of the implementation of Hong Kong's Conservation Policy. Under this scheme, government-owned heritage buildings that are not Declared Monuments are "revitalised," or in other words, adapted for new uses. Whether it be adaptive reuse, constructive conservation or revitalisation, the definitions amount to the same emphasis on permitting alterations/changes for the purpose of given a building continued use – a new lease of life.

What's in a Name – Adaptive Reuse, Constructive Conservation and Revitalisation

In the future, when we look back in time at the early history of post-Handover Hong Kong, the year 2007 will be seen as the historic year in which Hong Kong began to see conservation of its built heritage as part of sustainable development – a perspective shared by many countries worldwide. This was the year when the Chief Executive of the Hong Kong Special Administrative Region announced Hong Kong's first ever Conservation Policy in his annual Policy Address. In eight paragraphs (the longest ever on the agenda of heritage conservation), the detailed policies laid down a roadmap of how conservation in Hong Kong would be carried out. In particular, paragraph 51 states:

In my view, revitalisation, rather than preservation alone, should be pursued to maximise the economic and social benefits of historic buildings. This is in line with the concept of sustainable conservation.¹

But what is "revitalisation"? It is the Hong Kong terminology for an approach in conservation that has many names

that amount to the same thing. The root term is "adaptive reuse," which is defined by Heritage BC (among others) as:

Using an old building for a new purpose or function. Sometimes involves extensive alteration to both the exterior and interior.²

While both "adaptive reuse" and "preservation" are standard conservation approaches, the former involves alteration while the latter involves maintaining the existing state. As "adaptive reuse" becomes an increasingly relevant approach to the conservation of heritage buildings, the term has morphed into more creative variations, such as "constructive conservation" by English Heritage (2008), which is defined as:

the broad term adopted by English Heritage for a positive and collaborative approach to conservation that focuses on actively managing change. The aim is to recognise and reinforce the historic significance of places, while accommodating the changes necessary to ensure their continued use and enjoyment.³

¹ See: <http://www.policyaddress.gov.hk/07-08/eng/p51.html>.

² See: <http://www.heritagebc.ca/resources/guides-tips-1/terms-definitions>.

³ See: <https://www.english-heritage.org.uk/professional/advice/conservation-principles/constructive-conservation/constructive-conservation-in-practice/>.

⁴ See: <https://www.english-heritage.org.uk/professional/advice/conservation-principles/constructive-conservation/constructive-conservation-in-practice/>.



ADAPTIVE REUSE OF HONG KONG'S HERITAGE BUILDINGS: THE GOOD, THE BAD AND THE UGLY

In its 2008 advocacy for “constructive conservation,” English Heritage demonstrates the viability of the approach with 20 completed projects in its online publication *Constructive Conservation in Practice*.⁴ In this well-illustrated publication, heritage buildings – originally industrial, institutional or military – are repurposed as successful venues for arts, commerce, education and housing. All of these projects involve acceptable design interventions that allow the buildings to assume their new roles while retaining their heritage character.



Fig. 1 Cover of English Heritage's online publication, *Constructive Conservation in Practice* (2008). (Source: English Heritage)

In Hong Kong, “revitalisation” began life in 2008 under the Revitalising *Historic Buildings Through Partnership Scheme* (more commonly referred to as the less mouthful Revitalisation Scheme), an initiative that is part of the implementation of Hong Kong's Conservation Policy. Under this scheme, government-owned heritage buildings that are not Declared Monuments are “revitalised,” or in other words, adapted for new uses. Echoing English Heritage's statement on constructive conservation, the Commissioner for Heritage's Office states the following for the Revitalisation Scheme:

We are committed to put our historic buildings to good adaptive re-use. We aim to give these buildings a new lease of life for the enjoyment of the public.⁵

Whether it be adaptive reuse, constructive conservation or revitalisation, the definitions amount to the same emphasis on permitting alterations/changes for the purpose of given a building continued use – a new lease of life.

The Rise of Adaptive Reuse in Hong Kong

Prior to the 2007 Conservation Policy, the understanding of conservation in Hong Kong was limited to “preservation” and “restoration.” In the context of conservation, the term “preservation” has its origin in archaeology, which follows the principles of maximum protection and minimum intervention. According to Article 1.6 of *The Burra Charter* (2013, 2), “preservation” means “maintaining a place in its existing state and retarding deterioration.”⁶

This is exactly the way an archaeological site should be protected, and such a methodology was adopted for the protection of built heritage in the early days of conservation, ushered into the world by UNESCO through its effort to rescue Egypt's Nubian Monuments that were threatened by the construction of the Aswan High Dam Project.⁷ This international rescue effort, which lasted from 1960 to 1980, was the catalyst that spurred the adoption of the 1972 *UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage*, which formed the basis for the global movement in built heritage conservation.⁸

The same 1972 Convention provided the basis for Hong Kong's 1976 Antiquities and Monuments Ordinance (Cap. 53), and the enforcing agency of the law was the Antiquities and Monuments Office (AMO), established in the same year as the ordinance and with the responsibility of protecting and preserving Hong Kong's “antiquities,” namely, archaeological sites and historic monuments.

⁵ See: <http://www.heritage.gov.hk/en/rhbt/about.htm>.

⁶ See: <http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf>.

⁷ See: <http://whc.unesco.org/en/activities/173/>.

⁸ See: Prott 1991, 1.



Dr LEE Ho Yin / Prof Lynne D. DISTEFANO

Notably, until the 2007 Conservation Policy, AMO was staffed almost exclusively by archaeologists and museum curators (and they carried the title of “Curators” in various grades). Referencing the methodology of archaeology and artefact restoration, built heritage was preserved, and when necessary, restored to its original state, in the manner of a museum artefact.

The early focus of AMO has coloured the way conservation is understood in Hong Kong. In the first half of the 2000s, built heritage conservation was a heated topic among the citizens of Hong Kong. Despite the rising demand for conservation, the limited public knowledge in conservation was reflected in the catchphrases chanted by activists and echoed by the media: “preserving heritage in its original flavour” (原汁原味) and “restoring the old back to the old” (修舊如舊). The authors of this paper, as founding professors of China’s first master-degree level architectural conservation programme (established in 2000) at The University of Hong Kong, were among the first in Hong Kong to promote the adaptive reuse approach for built heritage. The criterion being that such an approach is appropriate for buildings no longer of viable use and which can better serve society through repurposing for relevant new uses. Such repurposing often requires some change to the exterior, alteration(s) to the interior and new construction, including, at times, new additions, in order for the repurposing to be viable, and the repurposed building more usable.

It was not an easy task to promote something that had limited public understanding. In 2005, one of the authors of this paper (Lee) spoke publicly against the indiscriminate pursuit of preservation and restoration of heritage buildings as museums, and advocated repurposing such buildings with innovative design interventions for practical new uses. He was met with hostile reactions from the public (expressed through blogs and social media). Fortunately, a sea change began with the 2007 Conservation Policy and the 2008 Revitalisation Scheme, and the expanded public understanding in conservation has resulted in public approval of such revitalisation projects as the

Central Market (the Central Oasis Project by the Urban Renewal Authority), where the old market building will be integrated with an innovatively designed steel-and-glass new structure to provide more space for the effective – and sustainable – utilisation of the original structure.⁹



Fig. 2 The Central Oasis Project, adaptive reuse of the Central Market for shopping and public recreation and entertainment. (Source: AGC Design Limited)

From Adaptive Reuse to Innovative Adaptive Reuse

An indicator of the coming of age of innovative adaptive reuse in Hong Kong can be seen in the publication of an article in the property section of the South China Morning Post, entitled “Preserving the past in new buildings is back in fashion.” In this article, the reporter Peta Tomlinson writes,

Repurposing... Using architectural innovation to make an existing structure viable again seems preferable on many levels: it retains some linkage to the past, saves construction waste and, sometimes, can even be more cost-effective than starting from scratch. Architects call this “adaptive reuse”. And if it has not yet come to a neighbourhood near you, chances are it is not far away.¹⁰

⁹The author, Lee, was a URA- appointed advisor for this project from 2009 to 2011.

¹⁰See: <http://www.scmp.com/property/hong-kong-china/article/1549716/preserving-past-new-buildings-back-fashion>.

ADAPTIVE REUSE OF HONG KONG'S HERITAGE BUILDINGS: THE GOOD, THE BAD AND THE UGLY

The Hong Kong public has indeed been more accepting of adaptive reuse as a way of conserving Hong Kong's heritage buildings. Public opinion on adaptive reuse has been swayed by the success of several award-winning adaptive reuse projects, including the Savannah College of Art and Design (SCAD) Hong Kong (adapted from a district court house, completed in 2010), Tai O Heritage Hotel (adapted from a police station, completed in 2012) and Comix Home Base (adapted from two rows of Chinese shophouses, completed in 2013). With the completion of project to revitalise the former Police Married Quarters as shops and facilities for local designers, and the impending opening of revitalised Central Police Station compound as a public venue for the promotion of contemporary art and heritage, there will be a critical mass of innovatively revitalised projects that will fully demonstrate the validity of adaptive reuse in Hong Kong.



Fig. 3 The Comix Home Base, adaptive reuse of two rows of pre-war shophouses as facilities to showcase local comic book and animation artists and their works. (Source: Lee Ho Yin)

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Speakers and Papers



Ir CHAN Chi Ming, JP

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Mr CM CHAN joined the Hong Kong Government as Engineer in the 1980s and has served in several Government departments and the Government Secretariat from 2001 to 2006. He was promoted to Chief Engineer in 2006 and took up the position of Deputy Director in Civil Engineering and Development Department in 2012. He returned to the Development Bureau of the Government Secretariat in November 2013 as Deputy Secretary (Works) heading the Works Policies and Infrastructural Projects Division.

Smart Cities, Smart Citizens

Ir CHAN Chi Ming, JP

Deputy Secretary for Development (Works), Development Bureau HKSAR Government

1. Introduction

Population growth and the trend of globalisation give rise to rapid urbanisation and city development all around the world. We are seeing a variety of urban problems emerging, particularly the ever increasing demand for infrastructure, transportation, public security, health services and education. As a result, all cities are finding the means to tackle the problems of resource depletion and competition from neighbouring areas. City planners and engineers are attempting to make cities more liveable and efficient. This task is becoming the most prominent objective of the public policy arena all over the world.

In recent years, “smart city” is a very trendy concept. A “smart city” is one that uses information and communication technologies (ICT) to make its critical infrastructure, components and utilities more efficient and interactive with the people living in it. But ultimately, it first needs a lot of creativity and innovation beforehand so as to better apply technologies to enhance our living quality.

As the British architect Cedric Price said in the mid-1960s:

“Technology is the answer. But what is the question?”

What it means is that there is no doubt that technology could help solve our problems but first, we need to better define users’ requirements. To build a smart city, we must delineate the aspects that we could benefit from technology – that is where we need creativity and a new vision.



SMART CITIES, SMART CITIZENS

2. Smart City – A Sustainable And Liveable Model For Hong Kong

In Hong Kong, facing its unique characteristics, we do not have the luxury of choosing among many planning and development models. Hong Kong is small geographically, so our city planning will need to continue to ride on the principles of high density and high efficiency. The advantage of Hong Kong is that there are many opportunities around us but to embrace those opportunities, especially economic opportunities, we have to prepare ourselves and prepare the city's infrastructure as a firm foundation for further development.

Our vision of building a sustainable and liveable city for Hong Kong – a so-called “smart city” for the future – is founded on four pillars: high density, low carbon, wise and walkable.

High Density – In terms of land uses, it is expected that there could be more mixed-typed land uses with vertical and horizontal integration of residential, commercial and recreational uses. Through suitably mixing and matching between industries and communities and ameliorating mutual adverse impacts, it would enable employment within the same district that people live, thereby avoiding population/employment imbalance. Clusters of comprehensive, high density development areas could be planned in such ways to fully integrate with railways/the use of electric vehicles for external/internal commuting purposes, and other engineering infrastructures to enable the new town communities to function cost-effectively and efficiently. In the past, we no doubt had a high-density mode development but the land uses were often too simplistic leading to employment and social problems. The imbalance of population and employment opportunities, if not addressed, could also result in traffic and transport infrastructure bottlenecks.

Low Carbon – A visionary approach could be considered to embrace, in addition to the usual environmental factors and energy efficiency, carbon emission as a further planning parameter. Resource efficiency and integrated green systems on a district scale and meeting the most forward-looking sustainability requirements could be developed. More innovative ideas could also be adopted to meet the ever tightening requirements e.g. district cooling systems, storage of surplus renewable energy, central air-conditioning coupled with acoustic insulation

windows, etc. Nature and the ecology would be conserved or rehabilitated as far as practicable. Throughout city planning, opportunities should also be explored to create green corridors and city lungs.

Wise – Essential to a smart city is the building of a “wise” IT network infrastructure. Such a digital infrastructure should have the capability to improve economic and resource efficiency while enabling more effective social, cultural and physical urban development. We could make use of advanced interactive IT platforms and computer intelligence to analyse data instantly to make better decisions, anticipate problems and resolve them proactively, and coordinate resources to operate effectively. Such systems will be conducive also to creating business opportunities.

Walkable – Spatial distribution amongst developments should be planned with major population centres, key activities centres and transport interchanges bonded together. Pedestrian friendly facilities and environment should also be made available to promote walking and minimize short vehicular travel. In fact, under “high-density” city, walking is often a suitable mode and could be the lowest carbon mode.



Figure 1 – A Sustainable and Liveable Hong Kong

The above planning visions are meant to interact with each other. For example, communication and technology should enable people to work at home, and the continued



Ir CHAN Chi Ming, JP

growth of home offices and online businesses would also necessitate more mixed use planning. With all these planning visions in mind, we aim to lessen commuting demands and overall carbon emission at the end, making the future new towns and transportation infrastructures more efficient, environmentally friendly, pleasant, affordable and sustainable. In short, the “smart city” would enable us to “Do More with Less”.

3. Be Resilient And Vigilant

A smart city must also be a safe one. Whilst being among the safest cities in the world, Hong Kong could still be vulnerable to natural and weather-related disasters, in particular, given the global trend of urbanisation and climate change.

There have also been two near-misses in Hong Kong recently – the severe rainstorm in June 2008 and Super Typhoon Usagi in September 2013. These ring the warning bell about the potential threat of extreme weather events to our populace and the vulnerability of our infrastructure under such events.



Figure 2 – Widespread Natural Terrain Landslides and Debris Flows on Lantau Island in June 2008



Figure 3 – Trunk Road to the HK International Airport was Cut Off by Debris Flows and Flooding in June 2008

To combat the risk of extreme weather events, we have to enhance our resilience against the weather-related hazards that may threaten us. This includes improving both the “hardware” and “software” aspects of our resilience:

(a) “Hardware”

Resilience can be enhanced through an engineering approach to upgrade our infrastructure, making it more robust in protecting us from serious hazards. This encompasses the adoption of improved design standards and practice, as well as implementation of retrofitting and improvement works to upgrade our facilities. It also calls for support through research, development and technological innovation.

Recently, Hong Kong has been making a strenuous effort in this aspect. Our Slope Safety System, which comprises a suite of multi-pronged measures, is renowned for its performance in managing landslide risk in an urbanised setting. As part of the system, we have been systematically upgrading old man-made slopes and mitigating the natural terrain landslide hazards through our Landslip Prevention and Mitigation Programme. Over the last three decades, more than 7 000 slopes were dealt with under the Programme at a total expenditure of about \$12 billion, bringing about over 75% reduction in the overall landslide risk. Likewise, a systematic approach to identify flooding blackspots in the territory was established in 1994. With the progressive completion of major flood prevention measures such as expansion on existing drainage systems to increase the flow capacity, river training works for effective discharge of storm flow, stormwater pumping scheme to pump and discharge storm flow at flood prone areas directly to the sea and the village flood protection scheme, the number of flooding blackspots has reduced substantially. In particular, all major or regional blackspots identified were removed in 2010. To tackle the potential impacts on coastal structures under climate change in relation to rise of sea water level and changes in storm surge, Hong Kong has also taken steps since 2012 to commence the relevant studies and aims to update its strategy of coastline management including the technical design standards for coastal structures.

(b) “Software”

While improving the design and upgrading infrastructure facilities are important to hazard prevention and mitigation, this calls for significant financial investment. Hence, it is not sufficient, nor cost-effective, to count solely on engineering solutions in hazard management. The engineering approach needs to be supplemented with non-works



SMART CITIES, SMART CITIZENS

measures covering emergency preparedness, response and recovery. In contrast to the engineering works, which deal with the “hardware” aspect of our infrastructure, these non-works measures entail the “software” aspect to improve the robustness of our system in coping with emergency and enhance the resilience of the community in surmounting crises. In practice, it includes setting up warning systems for the relevant hazards, educating the public, providing emergency service in times of crisis to rescue and evacuate the population at risk, carrying out urgent repairs, implementing recovery initiatives, etc.

For example, the Geotechnical Engineering Office of the Government provides a 24-hour year-round landslide emergency service to deal with the landslide danger. When it is predicted that numerous landslides might occur based on recorded and forecast rainfall, Landslip Warning is issued to alert the general public of the potential landslide threat.

Although the current system is performing very satisfactorily in responding to the more commonly encountered emergency situation, it will be stretched beyond its limit or even exceedingly overwhelmed under extreme events. This is particularly so under multiple hazards of increasingly more extreme events amid climate change. To elevate the city’s resilience anticipatively, we will undertake ‘stress tests’ on our emergency systems by carrying out scenario-based assessments of relevant hazards and reviewing the adequacy of the systems against the compounding effect of multiple hazards such as the occurrence of numerous severe landslides on hillsides, severe flooding of the foothill areas and extreme water levels due to tides combined with storm surge at the same time under an extreme weather event. This will make the city smartly prepared and resilient in a holistic manner against extreme events.

For a smart city, there is the need for enhancing the resilient infrastructures as well as heightening the public’s awareness for vigilance and emergency preparedness within the community. This calls for a three-fold management strategy:

- (1) **Development Management** – Planning and implementation of sustainable development initiatives as a driver to meet the short and long term needs of the community.
- (2) **Asset Management** – Maintaining and operating the infrastructure as an asset to serve the vibrant community.

- (3) **Hazard Management** – Improving the engineering of the infrastructure and the preparedness of the system and community, to effectively manage the risk and enhance the resilience of the community in overcoming extreme events.

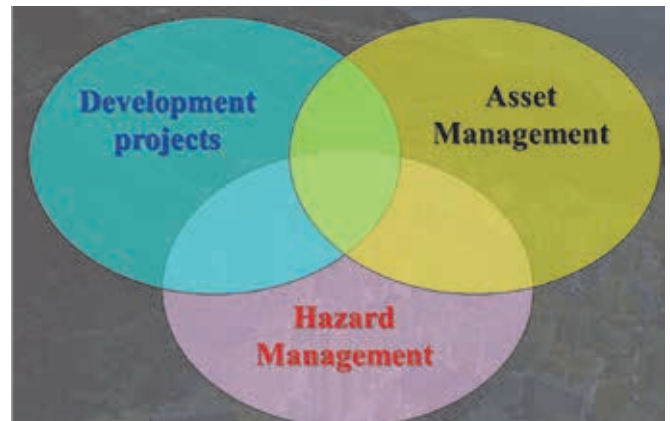


Figure 4 – Three-Fold Management Strategy

Hong Kong is proud in the sense that we have been invited for our expertise to coordinate international input from 14 countries and lead the Joint Technical Committee on Landslides and Engineered Slopes Forum on “Slope Safety Preparedness for Effects of Climate Changes” to be held in South Korea in the coming November to promote global experience sharing and collaboration in landslide emergency preparedness against climate change. However, we are not being complacent as we are always acutely aware of the challenges of extreme weather events and no one city could establish a sufficient system without sharing knowledge with others.

4. Smart People

It is to be stressed that smart management of natural resources such as water, air, energy and food alone is not enough to achieve a high quality of living for all the citizens. A more integrated view of the essential resources of a smart city should include its human resources: people living in the city have a key role to play not only in enjoying but also providing a better quality of life for themselves. We believe that we can only build a real “smart city” with “smart citizens”.



<http://www.ambienteambienti.com>

Figure 5 – A smart citizen

In developing a “smart city”, the government should not work as a director, but as an equal partner to achieve results. The ‘smart citizens’, who because of these new opportunities are able to contribute to the development of their own living environment, will get their chance to promote their own ideas on a bigger scale. Simply put: a “smart city” requires social intelligence and innovation through contribution from its people. To participate in the “smart city”, a “smart citizen” is always encouraged to share city data, experience, knowledge and innovation among others through a city or social platform so that we can adopt them to build up applications and gain insight into how the city works.

5. Challenges For Implementation

5.1 **Financing** – Pursuing smart, green and resilient development necessitates substantial investment. The investment level could exceed the business-as-usual infrastructure maintenance. Moreover, its positive impacts will materialise only over the long term. Currently, a policy enabling environment for financing such a smart development approach is yet to be established. As an example, the district cooling system at Kai Tak needs to be underpinned by legislation and substantial infrastructure has to be built by the Government in advance through a policy. Securing financing for smart, green and resilient development may also require alternative financing mechanisms that combine both public and private funds as public fund alone may be inadequate or inappropriate.

5.2 **Institutional Constraints** – While smart, green and resilient development requires the concerted efforts of many parties, inefficient or reluctant institutions following a sector-based approach could easily hamper the proper co-ordination for these cross-cutting issues, such as integrated land and transport planning. To overcome this, focus groups, institutes and/or task teams in the society that concentrate on coordinating and improving participation and participatory governance between government, business, research and development, and the public are essential so as to help bring about shared vision and consensus. These societal forums will also hold the space open for public debate and consideration on the range of trajectories that could be embraced in migrating towards sustainability and liveability in a “smart city”.

5.3 **Technology Adoption** – Due to the characteristic of software and associated IT systems, some cities have encountered concerns over potential proprietary business lock-in, in relation to smart applications and systems, which is a detriment to the long-term establishment of a smart city. Ensuring the inter-operability of systems through open standards is thus considered essential in order to ameliorate those concerns. Besides, smarter and more highly networked systems will inevitably extend the sharing of more individuals’ data, raising the potential risks of unauthorized data use or improper access to systems that might be inconsistent with the upholding of individuals’ data privacy. Secured cyber network management on a macro scale would be essential; and clear communication with service users as to how data is to be used and protected, and how the use of data could benefit them, will help build trust.

6. Conclusion

In this paper, we summed up our four planning principles of a smart city development model for Hong Kong: High Density, Low Carbon, Wise and Walkable and highlighted the need to enhance a city’s resilience in order to combat the global trend of climate change. Together with the progressive clustering of urban human capital, I believe a “smart city - Hong Kong” can be built to stand up to the challenge of simultaneously combining competitiveness and sustainable urban development in the next 30 years for our next generation.

Speakers and Papers



Dr CHAN Lai Kin

Director

Hong Kong Architecture Centre

Dr CHAN is the founder of arQstudio Ltd and the HK room in PMQ. From 2008 to August 2014, she was the Director of Design and Project in Hysan Development Co. Ltd. She has completed the LEED and Beam Plus pre-certified Platinum project, Hysan Place and a number of major asset enhancement project, such as the Lee Theatre renovation. Before joining Hysan, she used to be a design director in P&T Architects and Engineers Ltd. and won many local and international awards for her projects. She was also the recipient of Hong Kong Young Architect Award in 1993 and recently, the winner of Tai O Twin Bridge Design Competition in 2013. Apart from work, she actively participates in community works and currently being a Director of Hong Kong Architecture Centre. She is also an artist, teacher and author of a few books.

Green Innovative Designs for Our Super Dense City

Dr CHAN Lai Kin

Director, Hong Kong Architecture Centre

Abstract

Hong Kong is renowned for its super high density, which on one hand, gives the city world class greenery in the form of lush country parks and its people convenience, good connectivity, close community and land reserve for future generations, and at the same time, many environmental problems and poor living conditions. How to create quality high density living with very limited spaces? How to improve urban environment through the design of buildings? How to optimize scarce land resources or small interior? All these questions remain important agenda to the success of high density development model. This paper collects a few successful examples that show how these questions are answered from large development scale to human scale internal use of space. It highlights the problems as ones that go beyond the issue of quantity but with wisdom and innovations, can create interesting architecture and products, and bring good quality of life to its people.



Dr CHAN Lai Kin

The smart development model of Hong Kong

Over 170s years of development, Hong Kong has developed less than a quarter of its land while our neighbour, Shenzhen has used up more than 50% of their land in 30s years. Our concentrated development model and super high density lead to people’s complaints on their tight living conditions and the very high cost of space, which is reflected in the common saying, “a square foot costs an ounce of gold”. However, this model also provides Hong Kong people the largest country park in the world by proportion, which supports a great biodiversity, and a large land reserve for future generation. This is very much admired by other cities and green professionals as a good answer to our diminishing resources and growing environmental problems.

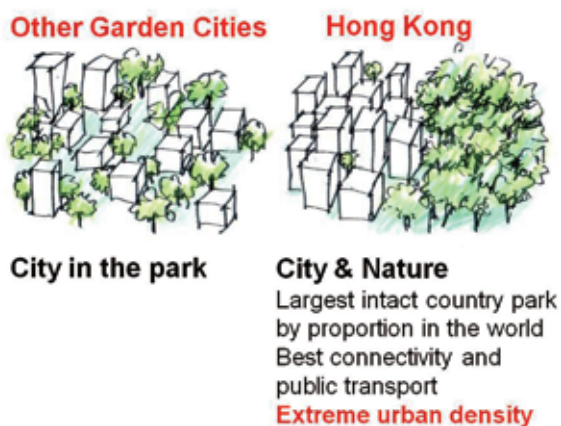


Fig 1. The extreme density development model of Hong Kong

Save our earth through compact living

Imagine if everyone in the world had a spacious house with a large garden on a big piece of land, what would happen to our earth? Where to grow our food or collect our water? How much time would we spend each day getting to work, meeting people and sourcing things we need? High density development has given Hong Kong world class greenery in the form of lush country parks, while still allowing Hong Kong people to enjoy the super convenience of proximity, saving precious time, staying close to extended families, and maintaining a big city’s diversity and contrast. Some even enjoy the “privacy” of being anonymous in the crowd, all the while still appreciating what the community has to offer.

Challenges of high density density and compact living

How to keep the merits of density – the 5 Cs: convenience, connectivity, community, cultural diversity and carbon-low, without suffering too much from its problems, such as high cost of space, insufficient rooms for activities, leisure, storage or even for proper reuse and recycling of waste, pollutions in over-built environment, poor accessibility for the less-abled and etc., remains as great challenges for developers and designers.

Innovative Solutions of Hong Kong in use of land and space

With high constraints from density, Hong Kong people and designers have developed innovative solutions to make best use of their limited lands and spaces. It involves solutions in all dimensions, from vertical stacking, climbing and interlocking, horizontal shrinking, packing and infilling, time sharing with movable, transformable devises, to the ultimate solutions that do not even need to touch the ground.

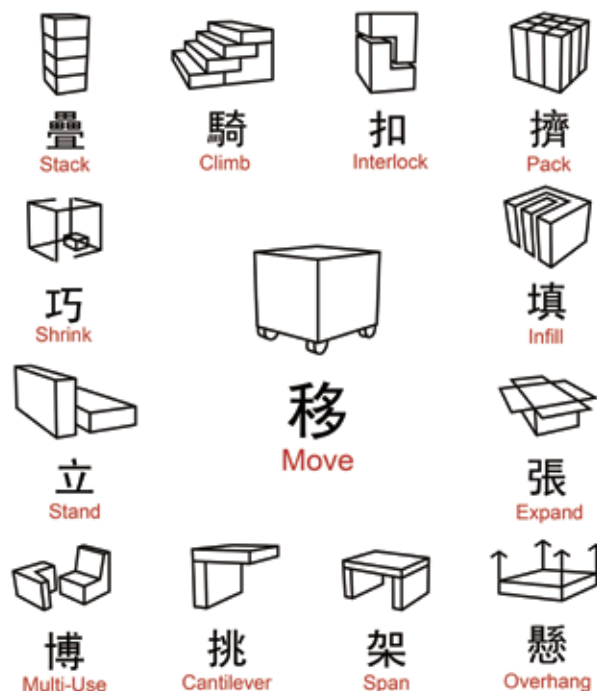


Fig 2. 13 ways in making better use of space



GREEN INNOVATIVE DESIGNS FOR OUR SUPER DENSE CITY

Case Studies:

Hysan Place – Smart solutions in use of urban land

Hysan Place achieved the highest green standards – USGBC LEED and HKGBC Beam Plus Platinum through its innovative green designs. It answers the high density problem by integrating various uses and open spaces into a high rise building on a small site, and tackles urban environmental problems, such as air pollution caused by poor urban ventilation and wall effect, heat island effect and lack of open spaces.

The building form of Hysan Place simulates a stacking of boxes, the in-between spaces are becoming the urban window features, which provide view corridors and air passage to the area. Prevailing breezes funnel through the building from the low-rise side towards the denser north-facing side, ventilating the polluted Hennessy Road area and relieving the canyon effect occurring in this area. The interplay of solid and void creates a spatial rhythm vertically throughout. This stacking also creates additional open/green space at various levels, offering multiple outdoor open spaces for enjoyment of the public.

The Urban Farm on roof level provides tenants and visitors green fields in the heart of the city to experience organic farming. Sky wetland on 16/F refuge floor treats grey water from office floors above and provides exclusive gardens for office tenants.

The Sky garden on 4/F open to visitors and users, brings light and air into the mid sections of the building, provides elevated green oases, and frames views back to the city in an effort to improve the environment of Causeway Bay as a whole. On the 7/F under the “bridges” of office lobbies, a food outlet lets customers enjoy dining in a semi-external environment and fresh produces from its herbs garden.



Fig. 3 Green Open spaces in Hysan Place



Fig 4 Organic Farming at Urban Farm of Hysan Place



Dr CHAN Lai Kin



Fig 5 Sky Wetland on 16/F of Hysan Place

Hong Kong Architecture Centre – Smart use of left over urban space and materials

Hong Kong Architecture Centre (HKAC) is a non-profit making institution that aims to bring architecture to the public by architectural education and appreciation, and to promote conservation of environment, heritage and culture. It proposed to use a left over traffic island in Sheung Wan to build their outreaching centre. With their professional knowledge, they aim not only to tackle issues related to the uses of spaces under flyover such as poor pedestrian accessibility, underground services, noisy, dusty and dark environment, but create an interesting attraction for the local community and tourists. It also attempts to recycle construction waste such as the use of fuel barrel from construction sites as formwork and upcycling concrete washed out form trucks into precast concrete façade units.

Stem Cells – Smart furniture system in use of interior space

It is a collection of furniture built out of a few standard modules, has all the traits of Hong Kong people's smart and thoughtfulness, encompassing our attitude of being quick and precise. It taps into Hong Kong people's wisdom in use of space by being stackable, mobile, flexible, collapsible and multifunctional. Its key components include a wheel board which can be used independently, and a few standard 375x375 square boxes of different heights and a variety of covers. It is built primarily out of environmental reconstituted MDF boards in shades of veneer and paint finishes. These units not only functionally solve the deficiency of space in Hong Kong, but also allow people to store their collections, unclutter their lives and conveniently enjoy their hobbies and interests.

Speakers and Papers



Prof DING Xiaoli

Chair Professor

Department of Land Surveying and Geo-Informatics

The Hong Kong Polytechnic University

Prof. Xiaoli DING is Chair Professor of Geomatics in Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University. He obtained his B.Eng. from Central South University of Mining and Metallurgy (now Central South University), China in 1983, and his Ph.D. from the University of Sydney, Australia in 1993. Prof. DING worked at Curtin University, Australia, as Senior Research Fellow, Lecturer and Senior Lecturer from 1992 to 1996 before he joined The Hong Kong Polytechnic University in 1996. He has been working at the University as Assistant Professor, Associate Professor, Professor, Chair Professor and Head of Department over different time periods.

Prof. DING's main research interests are in developing and applying new technologies for monitoring ground and structural deformations, geohazards, and smart cities. He has especially developed specialised GPS hardware and data processing algorithms and software for precise deformation monitoring. The technologies have been widely adopted by the industry for monitoring landslides, buildings, dams and other structures. His research group has also developed advanced InSAR data processing algorithms and software that are very useful to overcome some of the major problems of InSAR technology and to enhance the over quality of InSAR measurements. The research results have been applied widely to study ground subsidence, landslides and deformations of major engineering structures. Prof. DING has produced over 400 publications in his field of research and received various prestigious research awards.

Smart Cities from the Perspective of Geo-Informatics

Prof DING Xiaoli

*Department of Land Surveying and Geo-Informatics The Hong Kong Polytechnic University
Hung Hom, Kowloon*

ABSTRACT

Smart city as a concept for urban development is getting popular and is being implemented in various cities. Data, especially big data, and information are considered an essential element of a smart city system. In this aspect, spatial data and spatial information, as an important component of urban data and urban information, should play a major role in smart city development as such data and information are essential in establishing a fundamental spatial framework for the other types of data and information to be properly referred to spatially, and in helping to describe the various physical, social, economic and environmental phenomena of a city. Therefore, a smart city in nature should be spatially enabled so that spatial data and spatial information can be fully utilized. This presentation attempts to look into the development of smart cities from the perspective of geo-informatics, discussing the potential roles that spatial data and spatial information can play in this important development and how the land surveying profession should possibly get involved actively.

Speakers and Papers



Sr Hon Tony TSE Wai Chuen

Legislative Council Member (Architectural, Surveying and Planning) & Past President of HKIS 2003 – 04

Sr TSE Wai Chuen Tony is a Fellow Member of the Hong Kong Institute of Surveyors and the Royal Institution of Chartered Surveyors. He was the Chairman of the Surveyors Registration Board from 2002-2003 and the President of the Hong Kong Institute of Surveyors from 2003-2004. After graduation from the Hong Kong Polytechnic (now Hong Kong Polytechnic University), Mr. TSE joined the Hong Kong Civil Services and worked in different offices of Public Works Department (now is Lands Department) for 12 years. He was Senior Estate Surveyor when leaving the public sector. Thereafter, Sr TSE had been working in the private sector and holding senior position in various companies and organizations including Hongkong Land Property Company Limited, Chesterton Petty Ltd., Emperor International Holdings Limited, Urban Renewal Authority, Henderson Land Development Company Limited and Henderson Sunlight Asset Management Limited, etc. Sr TSE is now a director of Brand Star Limited, a property development and asset management consultancy firm.

Sr TSE has over 35 years' experience in real estate business. Apart from the daily business, Sr TSE is also keen in community services. He has served as a member of the Hong Kong Town Planning Board, member of the Land and Building Advisory Committee, member of Municipal Services Appeals Board, member of the Disciplinary Board Panel(Land Survey Ordinance), Chairman of the Real Estate Services Training Board of the Hong Kong Vocational Training Council, member of Disciplinary Panel of the Hong Kong Institute of Certified Public Accountants and President of Hong Kong professional and Senior Executives Association. Sr TSE is currently the Legislative Council member (Architectural, Surveying and Planning FC) member, member of the Standing Commission on Civil Service Salaries and Conditions of Service and Chairman of the Hong Kong Trade Development Council Infrastructure Development Committee.

Land Use Dynamic in Smart City Development

Sr Hon Tony TSE Wai Chuen

Legislative Council Member (Architectural, Surveying and Planning) & Past President of HKIS 2003 – 04

This year's theme for HKIS Annual Conference is "Hong Kong: Our Smart City in the next 30 Years". In the last 30 years, Hong Kong has made remarkable progress, riding on the golden opportunity of China national and economic growth. Where will Hong Kong be 30 years from now? We may be able to predict some clear trends with confidence, but there are many critical uncertainties, and therefore many different possible outcome.

Hong Kong is short of usable land, thereby, land resource is fundamental as engine for growth in the sense of land economy. We need to make good usage of land and a high-rise, compact development model would have to be adopted. We need to create new land strategically and efficiently to meet various competing uses, and also with flexibility to allow changes. We need to connect with our trading and commerce partners in the region and the globe with better networking and infrastructures. To be a smart city, we have to establish a well-balanced relationship between people and natural environment. Smart city development strategy will transform Hong Kong into a quality city which enables it to attract people, capital and ideas.

Speakers and Papers



Mr Michael J MOIR
Director of Property
The Hong Kong Jockey Club

Michael MOIR is the Director of Property at the Hong Kong Jockey Club overseeing the development and management of its diverse portfolio of operational properties. Since joining the Club in 2010 he has led a transformation of its processes for development management, facilities management and procurement. He is also responsible for the revitalisation of the Central Police Station compound, one of Hong Kong's most important heritage projects.

He has over 40 years of experience in the property industry, the majority of which was in Hong Kong. Prior to taking up his current role he was a development consultant to a number of companies in Hong Kong and UK and Managing Director of PCCW Infrastructure, following the merger with Hong Kong Telephone Company. Before that he was a Director of Swire Properties and played a leading role in many major projects such as Pacific Place, Festival Walk, Taikoo Place, Island Place, Robinson Place and the first phase of the Tung Chung MTR developments.

He graduated as a Bachelor of Science in Civil Engineering at the University of Aberdeen in 1977 and as a Master of Engineering at the University of Glasgow in 1977. He is a Fellow of the College of Estate Management, a Fellow of the Royal Institution of Chartered Surveyors and Member of the Institution of Civil Engineers.

How Smart is our City?

Mr Michael J MOIR

Director of Property, The Hong Kong Jockey Club

Rapid development of new technologies in recent years has led to the concept of a “Smart City” being recognized and evolving as a force that is now shaping the way that city governments plan and direct resources. Urbanization has continued at a pace, especially in China, and this has underlined the importance of creating cities that perform well in terms of their economies, education systems, governance, transport systems, environment and quality of life.

The presentation will examine the following key characteristics of a Smart City and assess how Hong Kong ranks in relation to those characteristics:

- Smart Economy
 - Innovation
 - Entrepreneurship
 - Productivity
 - Adaptability



Mr Michael J MOIR

- Smart People
 - Pre-school
 - Primary
 - Secondary
 - Tertiary
 - Life long learning

- Smart Governance
 - Politics
 - Organisations
 - Rule of Law

- Smart Mobility
 - Pedestrian
 - Cycling
 - Buses
 - Cars
 - Rail
 - Air
 - Sea
 - ITC

- Smart Environment
 - Nature
 - Pollution
 - Protection

- Smart Living
 - Housing
 - Health Care
 - Education
 - Security
 - Culture
 - Sports

It will also comment on ways in which the Hong Kong Jockey Club can contribute to the enhancement of these characteristics over the coming 30 years.

Speakers and Papers



Dr Peter COOKSON SMITH

President-Elect

Hong Kong Institute of Urban Design

Past-President

Hong Kong Institute of Planners

Dr Peter COOKSON SMITH is an architect, planner and urban designer. He has been resident in Hong Kong since 1977 when he founded Urbis Limited one of the first specialist planning, urban design and landscape consultancies in S.E. Asia, which over the past 37 years has won more than 100 local and international awards. He directed some of the first planning studies for new towns in the late 1970s and 1980s, and has been involved with many aspects of professional planning and urban design for a wide range of government bodies over the past 37 years including ecological and environmental studies, urban regeneration, strategic development investigations and harbourfront planning. He was among the first urban planners from the West to carry out studies for the PRC government in the early 1980s following the 'Open Door Policy'. He has since that time carried out a large number of planning and urban design studies in China and other parts of Asia. He is a member of Government's Strategic Development Commission, the Harbourfront Commission, and the Land and Development Advisory Committee. For several years he was an Associate Professor at the University of Hong Kong, and currently sits on the Advisory Council for the Department of Urban Planning and Design (DUPAD). He has also been a Visiting Scholar at the Centre for Asian Studies, and in 2013 he was a member of the Faculty of the Salzburg Global Seminar. He is the Immediate Past-President of the Hong Kong Institute of Planners and President-Elect of the Hong Kong Institute of Urban Design. He is the author of several books: 'The Urban Design of Impermanence' on Hong Kong, 'The Urban Design of Concession' on the growth and development of Chinese port cities, and the 'Urban Design of Intervention' on asian cities.

Smart Urban Design : How can we achieve it?

Dr Peter COOKSON SMITH

President-Elect, Hong Kong Institute of Urban Design

The presentation addresses several aspects.

First it examines the need to think 'Smart' about cities and therefore our design approach to them?

Second it discusses the things that should concern us.

Third it sets out the problem-solving approaches.

Fourth it suggests some steps towards looking at generic solutions, and what European and Asian cities are setting out to achieve.

Fifth it examines the implication for city planning and urban design.

Sixth it draws certain conclusions for the way forward in Hong Kong.



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project management
項目管理

planning and land advice
規劃及土地發展顧問

building disputes resolution
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Introduction of HKIS

The Hong Kong Institute of Surveyors ('HKIS' or 'the Institute') was founded in April 1984 and had 85 founder members. The Institute was statutorily incorporated by virtue of the Hong Kong Institute of Surveyors Ordinance in January 1990 (Cap. 1148). In July 1991, there was also passed the Surveyors Registration Ordinance (Cap. 417) to set up a Registration Board to administer the registration of surveyors.

The Hong Kong Institute of Surveyors is the only professional organisation representing the surveying profession in Hong Kong. The Institute strives to maintain a high professional standard and requirements amongst members including setting standards for professional services and performance, establishing codes of ethics, and determining requirements for admission as professional surveyors. The Institute imposes a mandatory requirement for all members to upgrade skills through continuing professional development.

As a reputable and responsible professional body of surveyors, the Institute has always maintained vigorous assessment standards for entry to the profession and has also maintained high professional and ethical standards of member surveyors, through the various codes of professional practices, the code of ethics, and continuing professional development. The Institute has taken on an important and responsive consultative role in government policy making particularly on issues affecting land, property and construction. The Institute plays an important role from time to time in giving advice to the Government on issues such as unauthorised building works, building safety campaign, problems of property management, town planning and development strategies, construction quality and housing problems.

The HKIS membership has now grown to almost 9,000. As at 1 August 2014, the number of members reached 8,927, there are 6,049 Corporate Members consisting of Fellows and Members – distinguished by the initials FHKIS and MHKIS; 66 Associate Members –distinguished by the initials AMHKIS; and 2,812 training grade members.

To qualify as a corporate member of the Institute, surveyors must possess a recognised academic degree or similar qualification, followed by a minimum of 2 years supervised professional experience within strict guidelines, followed by an Assessment of Professional Competence (APC).

The title "Surveyor" embraces a number of disciplines involved with land and its development with land and buildings, covering an extremely wide scope. Some surveyors work in private practices and others may work for a landowner, developer, building contractor or government departments and related bodies.

The Institute consists of six divisions:

1. Building Surveying Division
2. General Practice Division
3. Planning and Development Division
4. Quantity Surveying Division
5. Land Surveying Division
6. Property and Facility Management Division

A **land surveyor** measures and records the shape and position of the land, defines the boundary and sets out the legal boundaries of the sites. A **general practice surveyor** advises on the best use of the land, assesses the feasibility and viability of the proposed development project as well as the valuation, marketing, sale, leasing and management of completed developments. A **planning and development surveyor** further advises on the possible change of zoning, the likely environmental impacts and makes suggestions on preliminary development contents. A **quantity surveyor** is concerned with the building contractual arrangements and cost control, and will evaluate the likely cost of the development project and advise on the most suitable kind of contract for the project. A **building surveyor** is involved in the project management of building development proposal, holistic maintenance management of building and overall control of private buildings under relevant legislation. A **property and facility management surveyor** provides a comprehensive range of services in real estate management.



Introduction of HKIS

Internationally, the Institute has established and continues to expand its presence in the international scene through participation in various international platforms. Over the years, the Institute has shown its international importance and leading position by playing an important role in participating and joining different international organisations and committees included the World Organisation of Valuation Associations (WAVO), World Organisation of Building Officials (WOBO), Pacific Association of Quantity Surveyors (PAQS), International Federation of Surveyors (FIG), South East Asian Surveyors Congress (SEASC), International Valuation Standard Council (IVSC) etc. In May 2001, Past Chairman of the Quantity Surveying Division, Sr TT Cheung was elected as Chairman of the PAQS for the term 2001 to 2003 at the 5th PAQS Board Meeting. In January 2003, Past President (Council Year 1997/98) Sr WONG Thien Nyen was elected as the Vice President of the FIG Council 2003 – 2006. The status and reputation of the Institute have been much upgraded through the active participation in these international organisations and events.

Over the years, the Institute had also successfully organised a number of international events in Hong Kong or other countries. Few examples are: in 2000 HKIS co-organised the “Year 2000 Mainland and Hong Kong Conference on Urban Construction and the Environment” in Chongqing; in 2003 HKIS successfully hosted the 7th SEASC Congress in Hong Kong; in 2007 HKIS hosted the FIG Working Week 2007 in Hong Kong. The FIG Working Week was the biggest congress event ever organised by the Institute. The Institute also regularly hosts the Cross Strait Land Conference (兩岸四地土地學術研討會) and the Cross Strait Geometric Conference (海峽兩岸測繪發展研討會).

Besides international participation, the Institute has established reciprocity relationships with other national surveying bodies and through membership in relevant world bodies and international organisations in order to maintain its professional edge at international level. The Institute is one of the 3 founding members, apart from the Singapore Institute of Surveyors and Valuers and the Institution of Surveyors, Malaysia, of the Surveyors’ Alliance Asia which was inaugurated in November 2004. The Institute has reciprocal agreements with:

- The Australian Property Institute (API)
- New Zealand Property Institute (NZPI)
- Singapore Institute of Surveyors and Valuers (SISV)
- The Australian Institute of Quantity Surveyors (AIQS)
- New Zealand Institute of Quantity Surveyors Incorporated (NZIQS)
- China Institute of Real Estate Appraisers (CIREA)
- China Engineering Cost Association (CECA)
- China Association of Engineering Consultants (CAEC)
- The Building Surveyor’s Institute of Japan (BSIJ)
- Canadian Institute of Quantity Surveyors (CIQS)
- Chartered Institution of Civil Engineering Surveyors (ICES)

The Institute continues to increase its importance and standing both locally and internationally. Through maintaining both a high professional standard of the institute and the members locally, and keeping in pace with the professional levels internationally, the Institute is marching towards another step ahead of the summit.



Organising Committee



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Sr Edward AU

HKIS Vice President

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Sr Nathan LEE

Building Surveying Division

Sr Ada CHAN

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