The Hong Kong Institute of Surveyors Annual Conference 2017

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THE HONG KONG INSTITUTE OF SURVEYORS
香港測量師學會

HKIS Annual Conference 2017
GOLDEN OPPORTUNITIES in the Ageing Community and Built Environment

9 September 2017
Ballroom, JW Marriott HK,
Pacific Place, 88 Queensway, Hong Kong

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Message from Guest of Honour

Mr WONG Wai Lun Michael, JP
Secretary for Development
The Government of the HKSAR

I send my heartiest congratulations to The Hong Kong Institute of Surveyors (HKIS) for hosting its annual conference this year with the theme of "Golden Opportunities in the Ageing Community and Built Environment". I am sure this conference will be an enormous success.

The ability to deal with the challenges of an ageing community is becoming increasingly relevant to advanced economies. Hong Kong is no exception, as reflected by the sharp increase in the median age of our population from 20 in 1966 to 43 in 2016. Our buildings are ageing at an alarming rate too, and there are now more than 7,000 buildings that are over 50 years old in our midst. To meet these challenges, the Government is redoubling its efforts to ensure that Hong Kong will continue to be vibrant, liveable and sustainable.

On the planning front, we are making major efforts to promote "age-friendly" planning and design to facilitate ageing in place. This in turn means the creation of a more inclusive and supportive community through a wide array of housing choices and universal design concepts, as well as the provision of more space for elderly facilities in the community. On the building front, we will continue to put in place timely and pragmatic measures to assist owners to take care of their properties, and to foster a quality and sustainable built environment in our community.

HKIS has been and will remain a close and trusted partner of the Government, and its wise counsel will continue to inform key aspects of our policy formulation. I have every confidence that this valuable and mutually beneficial partnership will continue to grow and prosper in the years to come.

WONG Wai Lun, Michael, JP
Secretary for Development
The Government of the HKSAR

Message from the President

Sr HO Kwok Kwan, Thomas
President
The Hong Kong Institute of Surveyors

On behalf of the Hong Kong Institute of Surveyors, it is an honour to welcome you to the HKIS 2017 Annual Conference. It is a privilege to have so many industry specialists, business professionals and government delegates gathered here today to collaborate and confront the challenges facing our city. The Institute is grateful for your support and participation.

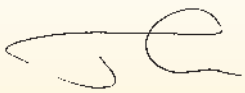
Today, we have assembled a group of experienced and well-informed presenters to share their knowledge on this year's topic, "Golden Opportunities in the Ageing Community and Built Environment". As one of the most competitive world cities and a financial and business hub, Hong Kong must adapt to and create the capacity for its growing ageing population.

After decades of prolific growth and development, Hong Kong has become an aged city in both population and infrastructure; its future liveability and wellness hinges on overcoming obstacles to better accommodate the elderly. Beyond the critical challenges facing our communities, there is great potential for golden business opportunities for companies in the property sector and beyond. Today's conference will explore a number of business prospects that an ageing city could offer, including building rehabilitation, urban renewal and the construction of new community facilities.

The HKIS is grateful to have our distinguished Guest of Honour, Mr WONG Wai Lun, Michael, JP, Secretary for Development, The Government of the HKSAR, for joining us today. The Institute is also honoured to have the following knowledgeable and highly experienced professionals from a range of industries to present for us today: they are Mr Raymond LEE, JP, Director of Planning, Planning Department, The Government of the HKSAR; Dr CHEUNG Tin Cheung, JP, Director of Buildings, Buildings Department, The Government of the HKSAR; Dr LAM Ching Choi, BBS, JP, Non-official Member, Executive Council, The Government of the HKSAR, Chairman of the Elderly Commission & Chief Executive Officer, Haven of Hope Christian Service; Prof YEOH Eng Kiong, GBS, OBE, JP, Director, The Jockey Club School of Public Health and Primary Care; Head, Division of Health System, Policy and Management, The Chinese University of Hong Kong; Mr Brian CHUANG, Head of Project and Development, Link Asset Management Limited; Dr Jacob KAM, Managing Director, Operations & Mainland Business, MTR Corporation Limited; and Ir WAI Chi Sing, GBS, JP, Managing Director, Urban Renewal Authority.

We are also most fortunate to welcome Ms Elaine TAN, Director, Strategic Research (Research and Development), Urban Redevelopment Authority Singapore, to share her unique perspectives and solutions for Singapore's ageing population. On behalf of the HKIS, we truly appreciate the time and commitment made by all of our distinguished speakers to be with us today.

Finally, the HKIS is sincerely thankful for all of today's participants, our honoured guests, speakers, moderators, supporting organisations and our generous sponsors, and for the organising committee, led by Chairman, our Vice President Sr Dr Tony LEUNG, for your collective contributions in arranging the HKIS 2017 Annual Conference. On behalf of the HKIS, I hope today's programme delivers a wealth of golden opportunities and solutions to Hong Kong's next great challenges, and wish you all great success in your endeavours. Thank you again, and please enjoy the conference.



Sr Thomas HO
President (2016-17), The Hong Kong Institute of Surveyors

Conference Programme

Time	Programme/Topic	Speaker
08:30 – 09:00	Registration	
09:00 – 09:10	**Welcome Speech**	**Sr HO Kwok Kwan, Thomas** President The Hong Kong Institute of Surveyors
09:10 – 09:40	**Opening Keynote Speech**	**Mr WONG Wai Lun, Michael, JP** Secretary for Development The Government of the HKSAR
09:40 – 09:45	Group Photo with Guest-of-Honour	
09:45 – 10:15	**Coffee Break**	
10:15 – 10:40	**From "Double Ageing" to "Double Thriving" – Hong Kong 2030+'s Strategic Response to Our Ageing Problem**	**Mr Raymond LEE, JP** Director of Planning Planning Department The Government of the HKSAR
10:40 – 11:05	**Care for the Aged Buildings**	**Dr CHEUNG Tin Cheung, JP** Director of Buildings Buildings Department The Government of the HKSAR
11:05 – 11:30	**Changing Landscapes for the Ageing Population**	**Dr LAM Ching Choi, BBS, JP** Non-official Member, Executive Council The Government of the HKSAR Chairman, Elderly Commission Chief Executive Officer, Haven of Hope Christian Service
11:30 – 11:40	**Q & A**	**Moderator: Sr Bay WONG** Chairman, Hong Kong Green Building Council Chairman, HKIS Senior Members Group and Past President, The Hong Kong Institute of Surveyors
11:40 – 11:45	Souvenir Presentation to Speakers and Moderator	
11:45 – 11:50	Souvenir Presentation to Sponsors	
11:50 – 13:20	**Lunch**	

Time	Programme/Topic	Speaker
13:20 – 13:45	Infrastructure Innovations for Ageing Societies	**Prof YEOH Eng Kiong, GBS, OBE, JP** Director The Jockey Club School of Public Health and Primary Care; Head, Division of Health System, Policy and Management The Chinese University of Hong Kong
13:45 – 14:10	Renovation of Shopping Centres and Fresh Markets for an Age-Friendly Community	**Mr Brian CHUANG** Head of Project and Development Link Asset Management Limited
14:10 – 14:35	Innovation and Age-friendly MTR Railway Service	**Dr Jacob KAM** Managing Director – Operations & Mainland Business MTR Corporation Limited
14:35 – 14:45	Q & A	**Moderator: Sr C K CHAN** Director, Lanbase Surveyors Limited Chairman, Housing Policy Panel The Hong Kong Institute of Surveyors
14:45 – 14:50	Souvenir Presentation to Speakers and Moderator	
14:50 – 15:25	**Coffee Break**	
15:25 – 15:50	Building Age-Friendly, Inclusive Communities for All	**Ms Elaine TAN** Director Strategic Research (R&D) Urban Redevelopment Authority, Singapore
15:50 – 16:15	Urban Renewal for More Inter-generational Harmony	**Ir WAI Chi Sing, GBS, JP** Managing Director Urban Renewal Authority
16:15 – 16:25	Q & A	**Moderator: Sr Dr Sandy TANG** Head, Office of General University Requirements The Hong Kong Polytechnic University Council Member, Quantity Surveying Division The Hong Kong Institute of Surveyors
16:25 – 16:30	Souvenir Presentation to Speakers and Moderator	
16:30 – 16:40	Closing Remarks	**Sr Dr LEUNG Ka Tung, Tony** Chairman Annual Conference Organising Committee The Hong Kong Institute of Surveyors
16:40	End of Conference	

Speaker Information

Mr Raymond LEE, JP
Director of Planning
Planning Department
The Government of the HKSAR

BIOGRAPHY

Mr Raymond Lee is currently the Director of Planning Department in the Government of the Hong Kong Special Administrative Region. He is also a member of the Planners Registration Board. From late October 2012 to May 2014, Mr Lee was the Head of Energizing Kowloon East Office responsible for overseeing the transformation of Kowloon East into another core business district of Hong Kong. He was the Secretary to the Town Planning Board from May 2014 to November 2016.

Mr Lee has extensive experiences in town planning. He has previously been involved in planning for the old airport site at Kai Tak, review of the Town Planning Ordinance, harbour-front planning and development, boundary closed area and cross-boundary planning, and planning for new development areas in the New Territories.

ABSTRACT

From "Double Ageing" to "Double Thriving" – Hong Kong 2030+'s Strategic Response to Our Ageing Problem

Hong Kong is facing a "double ageing" phenomenon with a rapidly ageing population and building stock. In approximately 30 years' time, the number of elderly aged 65 or above is projected to double from the existing, while the number of private residential units aged 70 or above will increase even more rapidly, by nearly 300 times, from the existing. Evidently, more timely and strenuous effort is needed to avert the threat of "double ageing" and to turn it into future opportunities. The "Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030" ("Hong Kong 2030+") is an on-going review of our long-term territorial development framework. Under the vision for a liveable, competitive and sustainable Asia's World City, Hong Kong 2030+ advocates enhancement to the quality of our living environment, including the existing urban areas for the well-being of all. From promoting "active ageing" and "ageing in place" to facilitating retrofitting and urban renewal, this presentation and paper will highlight the strategic directions and actions pertinent to the two issues under the context of Hong Kong 2030+. These proposals invariably bring along a plethora of opportunities for smart and affordable solutions and design. What the government needs are support and participation from both the public and private sectors to turn the "double ageing" crisis into a "double thriving" future for Hong Kong.

Introduction

The end of the Second World War in August 1945 marked a new chapter in Hong Kong's illustrious history. In the ensuing months and years, large influx of migrants and refugees made Hong Kong their home, and in turn, spearheaded the rebuilding of our economy. In the space of three years, the population had multiplied by threefold to about 1.8 million people by mid-1948[1], and thereafter, increased by approximately one million people per decade until the close of the century[2].

In the 1950/60s, Hong Kong witnessed a significant baby boom fuelled by the optimism and prosperity brought about by the city's rapid economic growth through trade and industrialisation. The city also experienced a construction boom that lasted into the 1980s, partly attributed to regulatory reforms which allowed the trading of undivided shares of lots and higher permissible development densities than the past[3], resulting in high-rise developments with multiple ownerships. Hong Kong continues to make steady socioeconomic progress into the 21st century; in particular, our advanced public healthcare system has contributed to the longevity of our people, who currently enjoys one of the world's longest life expectancy at birth (at 81.2 and 86.9 years respectively for male and female in 2014), and is expected to remain so by 2064 (at 87.0 and 92.5 years respectively)[4].

"Double-ageing" Phenomenon

As the baby boomers enter into old age and many of our post-war buildings approaching the end of their lifecycle, Hong Kong is facing a "double ageing" phenomenon with a rapidly ageing population and building stock. In terms of population, in 30 years' time, the number of elderly (i.e. persons aged 65 or above) is projected to more than double the existing, reaching over 2.5 million people or about one-third of the population[i][5]. The "old-old" population (i.e. persons aged 85 or above) is projected to increase even more rapidly by over threefold to about 680,000 people or 8.3% of the total population. Given that elderly are most vulnerable when living alone, it is also worrying to note that the proportion of elderly-only (measured as persons aged 60 or above) households is projected to increase to 20.4% by 2024, more than double that from 2001 (10.0%)[6]. The ageing population will also reduce our labour force, which is expected to shrink from the peak of about 3.65 million in 2018 to about 3.11 million by 2064[7].

Looking ahead, the ageing population will pose a number of key challenges for the built environment. Firstly, it is projected that there will be an acute shortage in elderly services provision where the supply of residential care services (RCS) and community care services would fall short of the projected demand by about 14,000 and 18,000 places respectively in 2026[8]. Secondly, the concepts of "universal design" and "intergenerational living" have yet to become mainstream, which compromises the objectives for "ageing in place", "active ageing" and social inclusivity. Besides, there is also a lack of elderly accommodation choices in the private sector, which adds further pressure to the acute RCS demand. Beyond the hardware, there is also a perennial shortage of dedicated elderly care workers in Hong Kong, while there is still ample scope to apply the latest innovation and technology in facilitating healthy, active and smart ageing within the silver hair market.

The magnitude of our ageing building stock is even more alarming. Assuming no demolition would take place in the interim, it is projected that the number of private housing units aged 70 or above will increase by nearly 300-fold from 1,100 units in 2015 to 326,000 units by 2046[7]. In contrast, the current rate of building demolition and redevelopment is relatively slow, with an average of 2,100 private residential units demolished per year between 2011 and 2015. Furthermore, the ageing building stock is largely concentrated within the Metro Area, with Yau Tsim Mong, Kowloon City and Sham Shui Po districts accounting for over half of all private housing units aged 70 or above by 2046. In general, there is already insufficient space to carry out further development in these densely developed urban districts, let alone decant those residents and/or businesses affected by urban renewal.

To compound the problem, urban renewal efforts in Hong Kong often face many hurdles[9]. Firstly, multiple and fragmented ownerships are common, making it difficult to assemble sufficient property interests to initiate the redevelopment process, and may also result in neglect of the ageing building due to a lack of cooperation amongst owners, especially for buildings without owners' corporation. Secondly, some redevelopment sites have limited or no residual development potential, and on some occasions, the existing developments may have already exceeded the prevailing development restrictions,

[i] This figure excludes foreign domestic helpers.

resulting in limited incentives for the private sector to step in. Thirdly, the concentration of aged buildings in the Metro Area meant it would be very challenging to accommodate the affected households and/or businesses in the same neighbourhood. Lastly, the long lead time involved in redevelopment projects may also discourage urban renewal initiatives.

Although the two sides of the "double ageing" phenomenon are distinct, nonetheless, they can also interact on one another due to the prevalence of elderly owners in aged buildings. For instance, the three aforementioned districts with the highest numbers of ageing building stocks also have a higher than average proportion of elderly population. As the aged buildings reach the end of their lifecycle, these elderly owners are generally less able in financial, cognitive and physical terms to deal with the often lengthy, taxing and costly procedures in building maintenance or redevelopment, thus leading to further deterioration of both the building and the quality of life of the residents, and could even become a safety hazard for the public. Evidently, timely and rigorous response is needed to avert the threat of the "double ageing" phenomenon and to uplift the liveability of Hong Kong in the future.

Hong Kong 2030+

The "Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030" study ("Hong Kong 2030+") is an on-going review of our long-term territorial development framework. Building on the foundations of our last territorial development framework, "Hong Kong 2030: Planning Vision and Strategy", Hong Kong 2030+ sets out the vision for Hong Kong to become a liveable, competitive and sustainable "Asia's World City". Under this vision, the study has proposed a number of key strategic planning directions and actions to help tackle future challenges and tap into new opportunities through smart, green and resilient solutions. In particular, under the proposed building block of "Planning for a Liveable High-density City", Hong Kong 2030+ advocates eight city attributes, including fostering an inclusive and supportive city for all and rejuvenating the urban fabric, which are both specific to averting the "double ageing" phenomenon.

Fostering an Inclusive and Supportive City

In line with the New Urban Agenda from Habitat III[ii] and Goal 11 of the United Nations' Sustainable Development Goals[10], namely to "make cities inclusive, safe, resilient and sustainable", Hong Kong 2030+ advocates the creation of an inclusive and supportive city that champions the concepts of "universal design", "ageing in place" and "active ageing". To this end, the Government will prudently review the provision standards for various government, institution or community (GIC) facilities (including neighbourhood- and/or estate-based elderly facilities) under the Hong Kong Planning Standards and Guidelines, in particular, taking into account the recommendations from the Elderly Services Programme Plan[8].

Hong Kong 2030+ also advocates the promotion of "universal design" in both public and private premises, including the possibility to extend the existing "universal design" requirements from common areas to the interiors of private residential units so as to promote "ageing in place". Pilot areas for streetscape enhancement and/or thematic initiatives will also be identified in order to reinvent public spaces for the enjoyment of all, regardless of age, abilities or gender. The study also seeks to explore and encourage a variety of housing choices across the development sectors, including elderly housing, cohabitation and intergenerational living models that respect the wisdoms of our elderly and the traditional values of filial piety, while catering to the needs of the elderly, youth and all users.

The proposed improvement in GIC provision standards, the mainstreaming of "universal design" and the provision of more diverse accommodation choices would be crucial in creating a healthier, safer, more active and smart ageing environment in the future, whilst opening up new opportunities for service providers to tap into the growing silver hair market. Looking ahead, professionals and practitioners should also utilise urban innovation and technology in overcoming labour, as well as premise-specific constraints. There would be scope for service providers to leverage on smart and affordable technology and capitalise on co-use or shared-use concepts to foster a more inclusive city[11], for instance, the use of smart devices at signalised junctions to aid pedestrians in need, promoting a time-mix of compatible uses within

[ii] The United Nations' Third Conference on Housing and Sustainable Urban Development (2016)

community facilities and premises, and installing home-monitoring and health-monitoring devices to facilitate better and more immediate responses for needy residents, etc. Through a range of smart technology and planning measures, alongside enhanced community support, it is expected that tomorrow's elderly would be more active, independent and able, and would be less reliant on the public healthcare and residential care systems.

In fostering an inclusive and supportive city, service providers should also be aware of two emerging trends in the ageing demographics, namely the continued "feminisation" of the elderly population, and higher levels of education and health amongst tomorrow's elderly population. In terms of the former, it is projected that in 30 years' time there would be 42% (or about 440,000) more elderly female than elderly male in Hong Kong[5]. Evidently, the unique physiological, psychological, social and cultural needs of the elderly female population would create new market niches for the silver hair market. As for the second observation, unlike the elderly population of the last century, tomorrow's elderly population will be more educated and healthy[12]. This sizeable demography would be more adaptive and able to engage in reskilling/retraining programmes, which would help realise their productivity as valuable social capital. Clearly, tomorrow's elderly population could well become part of the solution to boosting Hong Kong's productivity, given the aforementioned shrinking trend in our labour force from 2018 onwards.

Rejuvenating the Urban Fabric

Although undoubtedly a colossal task, Hong Kong 2030+ considers the ageing urban fabric as a golden opportunity to address many of the existing urban problems in the densely developed urban areas. Through the process of urban rejuvenation, it is hoped that more prudent planning and design measures could be instilled into the urban fabric, leading to tangible improvements in terms of urban design, urban climate, air ventilation, and facilities provision, etc., and in turn, the liveability of the city.

The key emphasis of the study is to further facilitate redevelopment, rehabilitation, revitalisation, preservation and retrofitting initiatives on both project and area-wide bases. Given the unlikelihood to rejuvenate the ageing urban fabric all at once, the study also advocates the boosting of building management and maintenance initiatives so as to prolong the useful lifespan of buildings, enabling urban renewal to take place by phases. Efforts would also be made to reclaiming underutilised space for comprehensive redevelopment or for retrofitting purposes. In the process of urban renewal, focus will also be placed on respecting the neighbourhood characteristics and social bonding through planning, urban design and other means. To create more enabling sites to facilitate decantation and relocation of residents/businesses, Hong Kong 2030+ also proposed a multi-pronged approach to create development capacity, which would help satisfy our long-term development needs.

The unprecedented scale of our ageing building stock calls for radical and innovative responses in our future planning of the built environment. To this end, the Urban Renewal Authority recently commissioned an urban renewal study in Yau Ma Tei and Mong Kok districts to investigate new strategies, approaches, institutional frameworks and implementation mechanisms to implement its urban renewal initiatives. This seminal pathfinder study would explore various "out-of-the-box" solutions, such as transfer of plot ratio (including the associated market trading mechanism), development bonuses, and changes to prevailing regulations, etc., to formulate a more viable business case for the development sectors to step up urban rejuvenation efforts while enhancing liveability of the high density urban area. The Government will approach the recommendations from this study with an open mind, while at the same time, balancing the public's interest and other considerations.

Conclusion

During the six-month extensive public engagement of the Hong Kong 2030+ study, Development Bureau and Planning Department had engaged different sectors of the society and received many fruitful and constructive comments. While the comments were diverse and manifold, the need to respond to the "double ageing" phenomenon was widely supported by the public. There were also suggestions to further promote elderly-friendly designs, strengthen the hardware and software support of elderly care services, and the need for a comprehensive review of the urban renewal process, which were generally envisioned by the Hong Kong 2030+ study.

The strategic responses to the "double ageing" phenomenon go hand in hand with one another. For instance, with urban rejuvenation, more solution spaces could be created to enhance the various GIC facilities needed by the ageing population. The same is also true for many of the proposals under Hong Kong 2030+, such as further promoting walkability, increasing the open space provision target, reinventing public space for public enjoyment, and creating more development capacity, etc. While the strategic directions are pragmatic and action-oriented, without the support and participation from the private and non-government sectors, the Government would not be able to deliver the desired results on its own. It is hoped that through collaboration and partnerships between different sectors, we will be in a good position to turn Hong Kong's "double ageing" crisis into a "double thriving" future.

References

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[12] Gietel-Basten, S. 2017. "Measuring and Reconceptualising Ageing" delivered at the Hong Kong University of Science and Technology (HKUST) Oxford Leadership and Public Policy Executive Education Programme Series "Ageing Societies: Challenges and Opportunities" on 19 June 2017. Hong Kong: HKUST.

Speaker Information

Dr CHEUNG Tin Cheung, JP
Director of Buildings
Buildings Department
The Government of the HKSAR

BIOGRAPHY

Dr CHEUNG Tin-cheung is currently the Director of the Buildings Department in the Government of the Hong Kong Special Administrative Region. He joined the Hong Kong Government in September 1982, and has since served in the former Building Development Department and the former Buildings and Lands Department.

Dr CHEUNG holds a Bachelor of Science Degree in Estate Management from the University of Reading, UK, a Master of Science Degree in Construction Management from the University of Bath, UK, and a Doctor of Philosophy Degree in Fire Engineering from the City University of Hong Kong. He has professional qualifications in building surveying, property management and facility management.

Dr CHEUNG currently sits on the Hong Kong Housing Society, the Urban Renewal Authority and the Construction Industry Council as member.

ABSTRACT

Care for the Aged Buildings

Hong Kong's building stock is ageing. In 2016, there are about 22,000 private buildings aged 30 years or above. This number is projected to be 32,000 in 10 years' time. Building dilapidation and extant unauthorised building works pose serious challenges to our living environment. Among others, the major concern is the lack of owners' response to care for their buildings. While there is a challenge, there is an opportunity, in particular, for building professional to play a major role in shaping our living environment - We think, therefore we are.

The Buildings Department (BD) is committed to resolving the long-standing building neglect problem and has taken forward a number of measures, including the implementation of the Mandatory Building Inspection Scheme and the Mandatory Window Inspection Scheme since June 2012. This paper presents the BD's current efforts and the new initiatives in making the built environment safe and healthy for our community.

Introduction

Building neglect has been a long-standing problem in Hong Kong. As at end of 2016, the number of private buildings in Hong Kong aged 30 years or above is about 22,000 (52% of total numbers of the private buildings) and that aged 50 years or above is about 7,300 (17% of total numbers of the private buildings), and it is projected that the percentage will increase to 35% in about 10 years' time for buildings aged 50 years or above (Figure 1 refers).

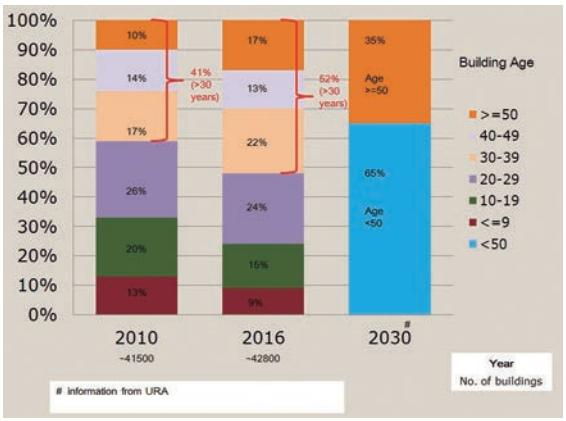

Figure 1: Age Group Distribution of Private Buildings in Hong Kong

Some of these buildings, especially those "3-nils" buildings[1], are already posing safety as well as management problems to their occupants and the public at large. At present, there are about 4,500 "3-nils" buildings aged 30 or above and 2,700 "3-nils" buildings aged 50 or above and their safety are of higher concern due to the lack of organisation or owners' responses to care for their buildings (Figure 2 refers). Building dilapidation and existence of Unauthorised Building Works (UBWs) pose serious challenges to our living environment. The recent collapse of a balcony at an old tenement building in Hung Hom reminds us again of the importance of caring for our buildings.

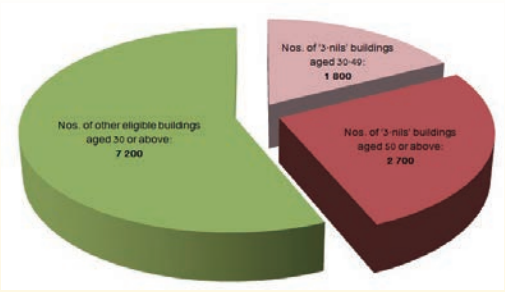

Figure 2: Distribution of "3-nils" buildings aged 30 or above under MBIS regime but not yet selected for MBIS

In addition to the problem posed by building dilapidation and UBWs, the fires at two old industrial buildings at Ngau Tau Kok and Cheung Sha Wan in June and July 2016 respectively aroused serious public concern over the inadequacy of fire safety measures of old industrial buildings in Hong Kong. These old industrial buildings, though meeting the prevailing fire safety standard at the time of their construction, fail to meet the present.

While there is a challenge, there is an opportunity, in particular for building professional to play a major role in shaping our living environment – We think, therefore we are.

The Buildings Department (BD) is committed to resolving the long-standing building neglect problem and has taken forward a number of measures, including the implementation of the Mandatory Building Inspection Scheme and the Mandatory Window Inspection Scheme since June 2012. This paper presents the BD's current efforts and the new initiatives in making the built environment safe and healthy for our community.

Current Efforts

To tackle the building neglect problem, the Mandatory Building Inspection Scheme (MBIS) and Mandatory Window Inspection Scheme (MWIS), after wide public consultation, were finally introduced through the enactment of the Building (Amendment) Ordinance 2011 and the subsidiary legislation, Building (Inspection and Repair) Regulation in 2011. (Figure 3 refers) The legislation empowers the Building Authority (BA) to serve statutory notices on owners as necessary requiring them to carry out inspections and repairs of their buildings and windows. The legislation also provides for matters relating to the appointment, control and duties of Registered Inspectors (RIs) and Qualified Persons (QPs) as well as the procedural requirements for such inspections and repairs of the buildings and windows respectively. The full implementation of the two schemes was commenced

[1] 3-nils buildings are those do not have an Owners' Corporation or any form of residents' organisations or a property management company.

on 30 June 2012. The scope of the two schemes covers common parts, and projections/windows of individual premises.

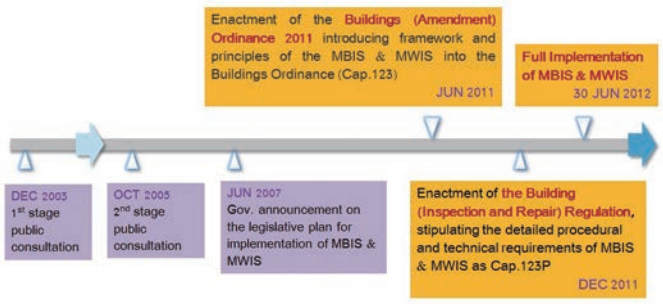

Figure 3: Timeline of Legislative Events

The purpose of the two schemes is to achieve the principle of "Prevention is better than cure". If owners care and regularly inspect their buildings, identify problems at an early stage, and carry out remedial works timely, accidents can be avoided.

Progress of MBIS/MWIS

As at the end of June 2017, BD has implemented the schemes for 5 years. During this period, BD has issued about 51,000 MBIS notices and 440,000 MWIS notices. The compliance rate for MBIS and MWIS is 35% and 84% respectively (Figure 4 and 5 refer). With respect to the common parts, the compliance rate for MBIS and MWIS notices is even lower at only 11% and 50% respectively (Figures 6 and 7 refer). Of the 1,500 aged 50 or above residential or composite buildings served with MBI notices to the common parts, 1,300 buildings (87%) were still outstanding. (Figure 8 refers). The progress, in particular on MBIS, is lagging behind owing to the challenges related to the building owners, the RIs and the BD.

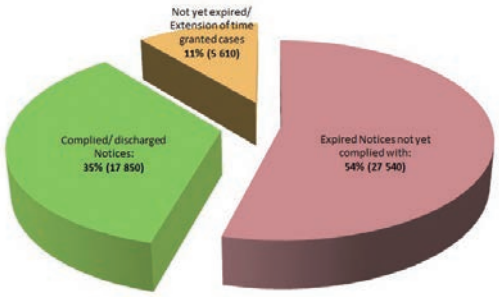

Figure 4: Status of MBI Notices issued (as at 30 June 2017)

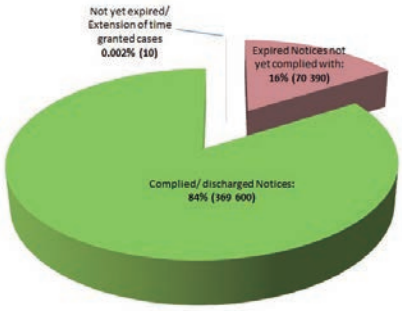

Figure 5: Status of MWI Notices issued (as at 30 June 2017)

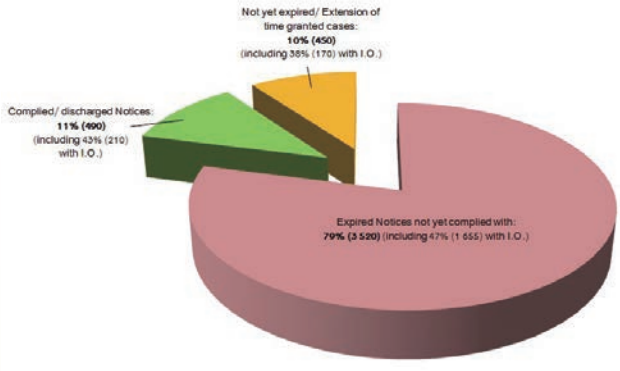

Figure 6: Status of MBI Notices issued for common parts (as at 30 June 2017)

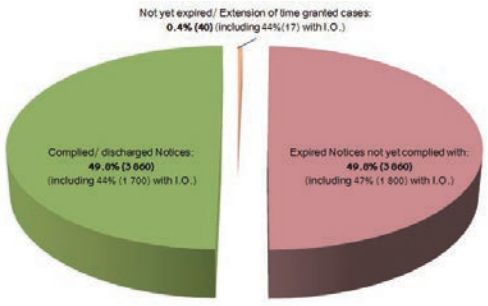

Figure 7: Status of MWI Notices issued for common parts (as at 30 June 2017)

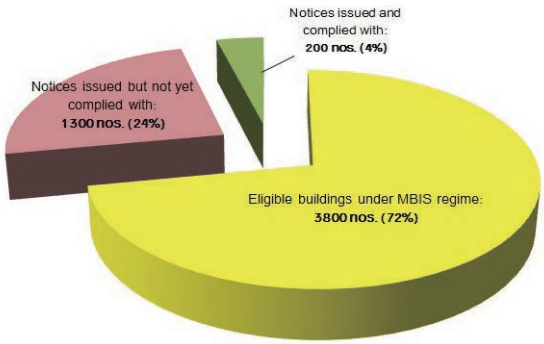

Figure 8: Status of MBI Notices for common parts of residential/ composite buildings exceeding 3-storey with age ≧ 50 years

Challenges

With respect to building owners, the following challenges are generally noted:

(a) Lack of acquaintance with the schemes;

(b) Lack of response and trust in getting together for compliance with the schemes;

(c) Lack of technical support (e.g. the necessary technical knowledge, skills and experience) and financial support in organizing building maintenance;

(d) Difficulties in identifying reliable RI/QP and contractors; and

(e) Lack of references on inspection and repair cost, in particular on the worry of bid-rigging.

With respect to RIs, the challenges are their unfamiliar with the requirement of the schemes; and lack of interest in participating in the market of MBIS. Of the total 490 number of RIs, about 200 (40%) have actually once worked as a RI. With respect to surveyors, of total 150 RIs, only 60 (40%) have actually provided RI service under the MBIS (Figure 9 refers). There are certainly rooms for our fellow surveyors to participate more in the building maintenance market.

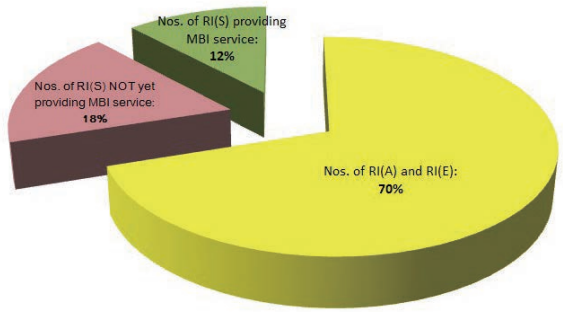

Figure 9: Distribution of Registered Inspectors

With respect to BD, the challenge is the heavy workload associated with the implementation of the schemes. BD has dedicated much manpower to process inspection documents and reports, respond to overwhelming volume of public enquiries, attend on-site briefings, conduct audit checks on submissions received, etc., leaving limited resources for taking enforcement actions against non-compliance of MBIS and MWIS notices.

As at June 2017, BD has issued about 14,000 warning letters and has instigated 38 prosecutions against the owners who did not comply with the MBIS notice. Fines laid by the courts vary from $7,000 to $10,000. With respect to MWIS, BD has issued about 44,000 warning letters and 1,800 Fixed Penalty Notices against owners.

With respect to regulation of service providers, BD has so far successfully prosecuted against QPs in 5 MWIS cases with fines laid by the courts varying from $2,900 to $13,500.

Taking into account the resources implications, BD has since 2014 adjusted downwards the annual number of target buildings under the schemes. In 2017, BD will implement the schemes to 400 MBIS/MWIS target

buildings. This will enable BD to better utilize its available resources to manage the heavy workload arising from the implementation of the schemes while consolidating experience and lessons learnt including exploring possible streamlining measures to improve efficiency of processes. With a smaller pool of target buildings undergoing the schemes at a time, BD and the supporting organisations will be able to provide more focused support to owners and allow the community more time to understand the schemes and get prepared.

Assistance to the Owners & Owners' Corporations (OCs)

To support the implementation of the MBIS and the MWIS, the Government, in collaboration with the Hong Kong Housing Society (HKHS) and the Urban Renewal Authority (URA), has launched various financial assistance schemes to help owners comply with the statutory requirements including the Mandatory Building Inspection Subsidy Scheme (MBISS) which provides subsidy on the cost of appointment of RIs for the first building inspection to eligible owners; and the Integrated Building Maintenance Assistance Scheme, the Building Safety Grant Scheme for Elderly Owners and the Building Safety Loan Scheme which provide various forms of financial subsidy and loan for repair works. On the technical side, BD would arrange District Briefing Sessions for the owners concerned and also issued guidelines, pamphlets, short films and layman's guide to assist owners to comply with the MBIS and MWIS notices. In addition, a mobile application was developed to provide a more convenient platform for the public to search for information of the two schemes and facilitate owners identify/appoint RIs and QPs and check the progress of the notices. BD also issues QP cards to QPs and provides the cost information for window inspection and relevant repair items under MWIS obtained from the quotations and advertising pamphlets provided by the QPs and Registered Contractors.

To enable building owners to proceed with tendering process for building maintenance works in a fair, unbiased and competitive environment, URA introduced the Smart Tender pilot scheme in May 2016 providing OCs of private buildings with a range of facilitating services for the repair and maintenance of their buildings. The services include the provision of professional and technical support to the OCs during the procurement process of contractors for carrying out common area rehabilitation works of the buildings. In the 2017-18 Budget by the Financial Secretary in February 2017, $300 million had been earmarked for property owners to participate in the "Smart Tender" pilot scheme at a concessionary rate.

Guidelines to RIs/QPs

To enable RIs and QPs familiarize with the requirements of the two schemes, BD holds experience sharing sessions with the stakeholders regularly, and where necessary, clarifies the requirements through the Code of Practice for the MBIS and MWIS (CoP), and the Practice Notes for Mandatory Building and Window Inspection Schemes (PNBI). A Technical Committee on the CoP has also been set up to collect views and consider comments or feedback received from the practitioners arising from the use of the CoP.

Since the promulgation of the CoP in 2012, two amendments have been made to the CoP in 2014 and 2017 to clarify the inspection, supervision and repair requirements after receiving feedbacks on the use of the CoP from the practitioners.

With respect to PNBI, BD has so far issued 7 PNBIs disseminating information and good practice to the practitioners for the implementation of the MBIS and MWIS. To facilitate RI preparing a building inspection report, BD issued the PNBI-7 in April 2016, providing 9 checklists for various building elements, and a sample inspection report on projections for the practitioners to follow.

Initiatives

Given the novelty and complexity of the schemes, the implementation of the two schemes is still at early stage. In addition to the current efforts on providing technical and financial assistance to owners, publicity and public education, making clear on the requirements of the schemes and regulating the RIs/QPs, BD together with stakeholders will continue to consolidate experience and lessons learnt with an aim to implement the schemes smoothly.

Outreach to Owners

As highlighted above, lack of organisation and response are among the major hurdles of compliance with the MBIS/MWIS notices at common parts. Earlier this year, BD conducted a small scale pilot project using its in-house social service teams to outreach building owners with a view to facilitating them to form OC and appoint RI. The result is promising with about 40% of the buildings under the pilot scheme had commenced or completed the inspection subsequently. BD will expand the outreaching services to cover more buildings in 2017. BD will also proactively outreach the owners, OC or the management office to provide briefings and technical talks with a view to help owners better understand the requirements of the two schemes.

Similar to "The Layman's Guide on MWIS" promulgated in April this year, and with an aim to enable building owners understand the requirements of MBIS in layman terms, BD is in the process of producing a layman's guide on MBIS for balcony, illustrating the major steps for compliance, the mandatory inspection components and conditions requiring repair. With good understanding of the requirements, building owners as consumers would be better equipped in the procurement of service providers against unfair trade practices.

Enforcement Actions

In parallel with the above support on helping owners organize together, BD will step up enforcement action in instigating prosecution against owners without reasonable excuse for non-compliant notices. For cases that are found with practical difficulties in discharging owners' duties, BD, with an aim to protect public safety, would carry out default works on behalf of owners and recover the costs from owners afterward.

Streamlining Procedures

BD has set up a dedicated counter for submission of MBIS and MWIS documents and introduced the electronic form submission system (EFSS) for MBIS and MWIS in 2016 to facilitate form submission by RIs and QPs. So far, about 60% of submissions are in electronic forms but very small amount are submitted online through the EFSS. BD will further promulgate and discuss with the practitioners so as to facilitate the use of online submission through EFSS by the industry. At the same time, BD will work to further simplify the specified forms for MWIS from current 7 types of form to 3. This will substantially reduce the number of form submissions, reducing the workload on the industry and the BD.

Voluntarily Compliance with MBIS/MWIS

Owners of many buildings may have their own schedule on carrying out major building maintenance works. Apart from mandatory schemes, owners are encouraged to volunteer at any time to arrange inspections and repairs of their buildings and premises in accordance with the standards and procedures of the MBIS and MWIS. In so doing, BD would exempt the building from being selected for MBIW/MWIS within the respective inspection cycle. BD will work to promote the benefit of voluntary compliance with MBIS/MWIS to the building owners, property management companies and registered professionals.

Opportunities

According to some market research, the building maintenance cost ranged from $56,000 to $100,000 per flat. With the large stock of aged buildings, it certainly is a huge opportunity for surveyors to have a finger on the pie. Just for the 5,300 number of residential/composite buildings with age 50 or above, the estimated inspection and supervision costs for RI could amount to 1 to 2 billion.

Fire Safety

Building deterioration problem is not the only building safety issue in old buildings. Amongst others, fire safety is another major concern. The Government implemented the Fire Safety (Commercial Premises) Ordinance (Cap. 502) in 1997 and the Fire Safety (Buildings) Ordinance (Cap. 572) in 2007 with an aim to improve the fire service installations (FSI) and equipment and to the fire safety measures in prescribed commercial premises, specified commercial buildings, and composite and domestic buildings constructed in or before 1987 or with their plans approved in or before 1987 respectively.

The fire incident in Amoycan Industrial Centre in June 2016 and the recent tragic fire in a subdivided unit at an industrial premises of Mai Sik Industrial Building heightened the concern over the fire risks of old industrial buildings, in particular their lack of sprinkler systems. There is a need to bring the fire safety of these buildings to a higher standard to provide better protection to occupants and visitors. It is proposed to introduce a new piece of legislation to make it mandatory for owners or occupiers of pre-1987 industrial buildings to upgrade the provision of FSI and fire safety construction similar to the approach in Cap. 502 and Cap. 572. In the coming months, the Government will continue to formulate the details of the legislative proposal and consult the stakeholder, including the relevant trade associations and professional bodies. Our plan is to introduce the new Bill in 2018. I trust that members of the HKIS can also render their expertise in assisting the Government to formulate the legislative proposal.

Conclusion

We need concerted efforts from all sectors to care for the aged buildings if we are to make the built environment safe and healthy for our community. Professional as our fellow members of HKIS certainly plays a major role in it, and you are called on to turn the challenges into opportunities on building rehabilitation. Please join us to disseminate the message of “Care for the aged buildings” and make Hong Kong a much safer place for all of us.

Speaker Information

Dr LAM Ching Choi, BBS, JP
Non-official Member, Executive Council, The Government of the HKSAR
Chairman, Elderly Commission
Chief Executive Officer, Haven of Hope Christian Service

BIOGRAPHY

Dr Lam is the CEO of Haven of Hope Christian Service. Under his leadership, Haven of Hope Christian Service is one of the pioneers in the provision of holistic end-of-life care for the elderly in Hong Kong.

He is an Non-official Member of the Executive Council of the Government of the Hong Kong Special Administrative Region. He is the Chairman of the Elderly Commission and the Elderly Care Service, Industry Training Advisory Committee of the Education Bureau. He also heads the Elderly Commission Working Group on Long Term Care Model and advises the Government on the reform in the related policies. He is the Chairman of the Community Investment & Inclusion Fund Committee and the Advisory Committee of "The Opportunities for the Elderly Project" of Social Welfare Department. Dr Lam is the Executive Committee Member and the Chairman of the Special Committee on Elderly Housing of the Hong Kong Housing Society. Dr Lam has been honored by the HKSAR Government with the Justice of Peace and Bronze Bauhinia Star for his devotion to public services.

ABSTRACT

Changing Landscapes for the Ageing Population

In 2064, one out of three Hong Kong people will be aged 65 or above. The Elderly Commission has formulated an Elderly Service Programme Plan (ESPP) with all sectors in the society to plan ahead for the ageing population. In order to build an age-friendly community for the elders, it is recommended that population-based planning ratios should be incorporated in the Hong Kong Planning Standards and Guidelines. An estate-based approach in site identification and provision for elderly services is advocated to provide an age-friendly community to facilitate the elders to age-in-place. Through designing and building a "City for All Ages", Hong Kong will be ready to embrace the new generation of Ageing Baby-boomers.

Introduction

1. The Hong Kong population is ageing fast. According to the latest population projections, our population will increase from 7.37 million in 2016 to a peak of 8.22 million in 2043 and then decline to 7.81 million by 2064. Meanwhile, the size of elderly population (i.e. aged 65 and above) will increase at a much faster rate, rising from 1.19 million in 2016 (or 16.2% of total population) to 2.51 million (or 30.6% of total population) in 2043, and further to 2.58 million in 2064 (or 35.9% of total population).

2. Needless to say, the demand for long-term care (LTC) services will inevitably increase as the trend of population ageing continues. Apart from the increase in the elderly population, the average elderly person is expected to become older, thereby further increasing the demand for LTC services. With the above two factors, the total demand for subsidised LTC services (comprising community care services (CCS) and residential care services (RCS)) is projected to rise from the current 60,000 service places to around 78,000 in 2030, and then reach a peak of around 124,600 in 2051. This drastic surge in service demand calls for a comprehensive medium-to-long term planning of elderly services. Against this background, the Elderly Commission (EC) was tasked by the Government in 2014 to formulate an Elderly Services Programme Plan (ESPP). After three stages of extensive public engagement and discussions, the EC completed the ESPP in June 2017 and the recommendations of the ESPP were subsequently accepted by the Government.

Major Recommendations of the ESPP

3. The ESPP proposes a number of measures which aim at addressing the challenges brought by the ageing population. These include measures to reduce the overall need for LTC services by elderly persons through enhancing health promotion, monitoring and maintenance, etc. Moreover, the ESPP recommends the strengthening of community-based support and care services to help elderly persons stay in the community as long as possible. This is not only in line with the wish of most elderly persons to "age-in-place" but can also reduce the overall demand for RCS that require more land and manpower resources.

4. However, even with these measures in place, the future demand for LTC services is still expected to grow significantly. The existing town planning process should therefore be reinforced to ensure a sufficient supply of suitable premises and facilities for the delivery of LTC services in the coming decades. In this connection, the ESPP has made two recommendations which are elaborated below.

Population-based planning ratios in the Hong Kong Planning Standards and Guidelines

5. The first relevant recommendation is the addition of population-based planning ratios for elderly services in the Hong Kong Planning Standards and Guidelines (HKPSG). The HKPSG is a Government manual of criteria for determining the scale, location and site requirements of various land uses and facilities including elderly facilities and applied in planning studies, preparation/revision of town plans and development control.

6. For the purpose of determining the planning ratios to be included in the HKPSG, the EC and its team of consultants adopted a mathematical model for assessing the demand for subsidised services from 2016 to 2064 based on the existing service usage patterns of subsidised LTC, as well as the projected change in the size, life expectancy and other social-economic factors of the elderly population. The projected service demand was then divided by the projected elderly population to arrive at the following indicative planning ratios set out in the ESPP:

   - Subsidised RCS: 21.4 beds per 1,000 elderly persons aged 65 or above; and

   - Subsidised CCS: 14.8 services places per 1,000 elderly persons aged 65 or above.

7. The rationale behind the proposed addition of population-based planning ratios is to facilitate early identification and reservation of sites and premises for elderly services. As the development of elderly facilities and infrastructure takes time with the whole process

on average taking around 10 years, we should plan ahead and identify suitable sites and premises for elderly services at an early stage. The proposed planning ratios will serve as an objective basis to help the relevant Government departments (e.g. the Planning Department, the Housing Department) determine the necessity to include sites and premises for provision of elderly services in new development projects to meet the projected service demand. By doing so, hopefully, there will be a sufficient number of subsidised LTC places in our society in future.

Estate-based approach in site provision for elderly services

8. The second recommendation made by the ESPP with respect to land and premises planning is the adoption of an "estate-based" approach when reserving sites for elderly services. It is observed in the ESPP that with the rapidly ageing population, it will become more common to have a considerable number of elderly residents in residential developments and many of whom will require support and care services to age in the community. The main idea of the "estate-based" approach is that residential developments (in particular large-scale ones) should in general have sites and premises reserved for provision of elderly services (especially CCS which is more localised as compared to RCS) to meet the needs of their elderly residents (i.e. "self-containing"). With this approach adopted in future, new public rental housing (PRH) estates and private residential developments of a sufficiently large scale should be advised by the relevant planning authorities to reserve premises for provision of elderly services as far as practicable.

9. As for those existing developments not able to be "self-containing" and relatively small-scale new developments, the ESPP recommends that consideration may be given to providing the required elderly facilities in "Government, Institution or Community" (G/IC) sites or designating one of the residential developments to reserve places for serving the elderly residents in nearby housing estates.

City for All Ages

10. The above measures recommended by the ESPP focus on facilities needed for the provision of LTC services for the elderly. However, more should be done with the rapidly-rising elderly population. We should also consider other issues such as housing design, transport, accessibility, etc. of the community as a whole. The ESPP notes that various initiatives have been launched by the Government in this regard.

11. In response to ageing population, the World Health Organization (WHO) introduced the concept of "age-friendly community" in 2005 to encourage cities around the world to offer elderly persons healthy and comfortable living environment and facilities.

12. The Government and the EC have been joining forces with the 18 District Councils (DCs) to build age-friendly communities. The 18 districts have been encouraged to obtain the WHO's accreditation of age-friendly community. As at end-July 2017, eight districts have already obtained the accreditation.

Housing

13. Over half of the elderly population in Hong Kong are living in public housing (comprising PRH and subsidised sale flats). The Hong Kong Housing Authority (HKHA) and the Hong Kong Housing Society (HKHS) have been making continuous efforts to help our elderly persons age well in the safety and comfort of their homes.

14. HKHA has adopted universal design in new PRH projects to enable tenants to reside in the same flat even at old age or after becoming immobile. These include widening the corridors, flat entrances, as well as kitchen and bathroom doors, using safer materials such as non-slippery floor tiles, etc. For old PRH blocks, HKHA will modify the facilities inside the housing units having regard to elderly tenants' special needs.

15. The Senior Citizen Residences Scheme of HKHS integrates purpose-built housing for elderly persons with comprehensive recreation, health and care facilities. The 576 housing units in two projects at Tseung Kwan O and Jordan Valley are leased out to eligible middle-income elderly persons under a "lease for life" arrangement. In 2015, HKHS launched the Quality Elderly Housing Project at North Point, which is a non-subsidised elderly housing project providing 588 age-friendly individual residential flats.

16. HKHS's Elderly Resources Centre provides professional advisory services on home adaptation or modification for elderly persons and their carers so as to make their homes more age-friendly. Eligible elderly owners-occupiers may apply for a maximum grant of $40,000 under the Building Maintenance Grant Scheme for Elderly Owners to carry out the adaptation works.

17. As for private housing, the Buildings Department has published a Design Manual, which serves as guidelines on top of statutory requirements, to encourage private property developers to create a more pleasant and safe environment for elderly persons.

18. Through the "Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030" Study, the Government is mapping out a comprehensive plan for an inclusive and supportive city with age-friendly built environment, suitable housing choices for elderly persons as well as adequate and quality elderly facilities, with a view to promoting active ageing, ageing in place and inter-generational support.

Transport and accessibility

19. To encourage elderly persons to stay in touch with their families and friends and take part in various community activities to keep them socially and physically engaged, we should enable them to make their own way around the city more easily, safely and comfortably.

20. Under the Government Public Transport Fare Concession Scheme for the Elderly and Eligible Persons with Disabilities, elderly persons can travel on MTR, franchised buses, ferries and green minibuses at $2 per trip. The average daily number of passenger trips made in from 1 December 2016 to 31 May 2017 was nearly 1.197 million, of which around 1.05 million trips were made by elderly persons.

21. To facilitate elderly persons to travel by public transport, specially designed elderly-friendly interface and functions have been launched on the "HK e-Transport" mobile application (app) for smartphones. The app provides one-stop point-to-point public transport route search service.

22. To improve travelling experience of the general public especially elderly persons, the Government will subsidise franchised bus companies to install seats and real-time arrival information display panels at covered bus stops. The installation works are expected to start in second half of 2017 and franchised bus companies are expected to complete installation of seats at about 2,700 bus stops and display panels at about 1,300 bus stops in three years.

23. To improve pedestrian accessibility particularly for elderly persons and other persons in need, HKHA is implementing the Lift Addition Programme. The Programme involves addition of 85 lifts, six escalators and 28 footbridges in 33 existing PRH estates.

24. To facilitate the public especially elderly persons to move around, the Government has been installing barrier-free access facilities at public walkways under the "Universal Accessibility Programme" (UAP). The Government has completed more than 50 items and are pressing ahead with the implementation of the around 150 projects remaining. The 18 DCs have been invited to nominate further walkways for inclusion in the next phase of UAP.

25. Hong Kong has many hillside buildings, and slopes and staircases are quite common. The Government should continue to take forward projects for hillside escalator links and elevator systems. In this connection, constructions of an elevated walkway in Tseung Kwan O and of a connecting footbridge in Tsuen Wan are underway.

26. A consultancy study on the use of information technology to allow more pedestrian "green" time for elderly persons and others in need is expected to be completed in 2018.

Age-friendly spaces

27. Regarding the creation of age-friendly spaces, the Government provides additional chairs in existing public facilities such as markets. It will provide covers on certain walkways connecting public transport facilities so that elderly persons and others can walk under shelter without being exposed to the weather.

28. The Government will install additional elderly fitness equipment in outdoor leisure venues. HKHA will enhance the provision of recreational facilities for elderly persons in over 100 PRH estates with more elderly tenants.

Conclusion

29. As we all know, the ageing population will bring about many challenges to our society in the coming decades. The greatest of these challenges will perhaps be how to provide sufficient care and support services for our elderly citizens so that they can continue to live in society with dignity. Given the lead time for the development of facilities and infrastructure, it is imperative for us to take early actions to prepare ourselves for the challenges ahead.

30. While the ESPP has recommended a number of measures from the lands and planning perspective, it should be recognised that addressing the challenges ahead require the concerted efforts from not just the Government and the welfare sector, but also from all sectors of our society. This includes, for example, a continuous effort from the development sector in improving the age-friendliness of our buildings and community design so as to build an ideal community where persons from all age groups could have a comfortable and enjoyable life.

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Speaker Information

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BIOGRAPHY

Professor Yeoh is Professor of Public Health, Director at the JC School of Public Health and Primary Care of The Chinese University of Hong Kong (CUHK) and also Head of Division of Health System, Policy and Management at the JC School of Public Health and Primary Care. His research is in health systems, services and policy. A current research interest is applying a system framework in enhancing an integrated health and social care delivery model for the elderly population. He is a member of the Research Council of Our Hong Kong Foundation. He leads in the Asia Pacific Network for Health Systems Strengthening in knowledge transfer to enable strengthening of health systems. He is also a member of the International Advisory Board of the National University of Singapore Initiative to improve health in Asia.

Prior to joining The Chinese University of Hong Kong, Professor Yeoh was Secretary for Health, Welfare and Food of the Government of the Hong Kong Special Administrative Region between 1999 and 2004. From 1990 – 1999, Professor Yeoh was head & the first Chief Executive of the Hong Kong Hospital Authority. He was President of the International Hospital Federation from 2001 – 2003 and was awarded the Hospital Management Asia Lifetime Achievement Award in 2002.

He was awarded JP in 1993, OBE in 1997 by the Hong Kong Government and GBS in 2005 by the Government of the Hong Kong Special Administrative Region.

ABSTRACT

Infrastructure Innovations for Ageing Societies

Population ageing is occurring rapidly in Hong Kong. This demographic transition may bring forth a multitude of challenges; one challenge relates to how the environment can be designed to cater for an ageing population that will have greater and diverse mobility needs. Unfortunately, despite a number of innovations and initiatives the current state of Hong Kong's infrastructure is largely unaccommodating to the growing ageing population and a transformation on how our infrastructure is built is needed. Not only do more innovative infrastructure concepts need to be incorporated into the design of the urban environment—including universal design principles and technology platforms incorporated into infrastructure—but multiple stakeholders within the private, public sectors and civil society must collaborate in devising more creative solutions that can revolutionize the built environment for the future population.

Infrastructure Innovations for Ageing Societies

Population ageing is a global phenomenon and addressing the unprecedented challenges requires a reexamination of our political, social and physical infrastructures. Hong Kong's population, with one of the world's longest life expectancies and lowest fertility rates, is rapidly ageing. According to projections conducted by the Census and Statistics Department in 2015, the median age of the Hong Kong population will reach 51 years by 2064, and 36% of the population will be 65 and over with falling fertility rates, an ageing population could also mean a shrinking population. While this change in the population structure can be perceived as a challenge, leaders within various disciplines and industries must collaborate to devise more innovative ideas for meeting those potential challenges. One of the many areas that is ripe for more innovative concepts to be brought forth pertains to recreating the urban environment.

On the whole, Hong Kong's built environment needs to be better prepared for the rapidly ageing population. With an ageing population comes the necessity for the built environment to be more inclusive for a variety of physical and functional needs.

The diversity of individuals in older age groups is demonstrated by the wide range of intrinsic capacities in the population after the age of 65 from individuals who are in excellent health and continue to contribute socially and economically to those who have lost much of their capacities to function fully without support and aids. Innovative concepts in infrastructure design that account for these heterogeneous needs can make for a more age-friendly Hong Kong.

Concepts in various functional capacities and environments can be considered when strategizing new infrastructure designs for the built environment. For example, the conceptual model from Webber et al.[1] provides a theoretical framework for mobility in older adults and how various "life-spaces" are composed of mobility determinants related to cognitive, psychosocial, physical, environmental, and financial factors. In addition, the Center for Universal Design at North Carolina State University in the United States pioneered concepts in universal design, which aims for the built environment to be designed with considerations for the groups of individuals who have the highest needs[2] Not only does universal design include more accommodating infrastructure to the elderly, but for the whole spectrum needs of every member of different communities. Infrastructure, then, is designed to the greatest extent to be used by everyone. From a business perspective, the need for new compositions of "life-spaces" are for today's "market majority." Rather than ignore this demographic phenomenon, industry leaders should step up and take a proactive approach to explore, design and develop new infrastructure ideas for a growing market.

While Hong Kong needs vast improvement in its built environment, certain groups have set an example by introducing innovative ideas in infrastructure. For example, in 2012, the Hong Kong Government launched the Universal Accessibility Programme (UA), which sought to expand the number of retrofitted barrier-free access facilities and infrastructure. UA barrier-free designs have also been embraced by entities around the community, such as the Hospital Authority, who has included ramps, tactile guide paths, elevators and emergency call buttons in washrooms. In addition, the Hong Kong Housing Society has made great efforts in developing age-friendly housing estates, such as the Tanner Hill, that are built with amenities in units and common areas with the specific needs of seniors in mind. Units include emergency call response systems, entrance door tracking, health data collection and monitoring and no-motion response detection. Chinese and Western medical clinics, day care, rehabilitation centres and a gymnasium are also found within the estate. Moreover, these sorts of innovative ideas can be further nurtured by close collaborations between leaders in the property, architecture, design, technology and government sectors, among others. Other countries, such as Japan and Singapore, are already many steps ahead in these built environment concepts. Universally-designed and high-tech public facilities that can accommodate for people of all needs are becoming more commonplace in these two countries. Hong Kong, on the other hand, has some catching up to do.

Besides the necessary hardware, software is also crucial. The start-up community should also be a key collaborator when developing a more age-enabling environment. Initiatives such as Big Silver Community, a two-year project funded by the Social Innovation and Entrepreneurship Development Fund, aims to establish a social network of the elderly, caregivers,

NGOs, corporates, professionals and media to engage them to collaborate in various community development programmes. Big Silver Community works with iBakery, a social enterprise restaurant, to distribute Big Silver Community's monthly publication, Big Silver Magazine. The magazine acts as a resource for not only seniors, but caretakers, NGOs and other concerned about social issues related to the ageing population. This socially innovative collaboration is an example of how developers should take into consideration every facet of the environment in order to create a fully age-enabling environment, including both the physical and social infrastructures.

Hong Kong is capable of becoming a leader of innovative infrastructure concepts for not only an ageing population but for the whole of Hong Kong. With continued collaborations among various industry leaders, optimism is abound that Hong Kong can be a more inclusively-designed, age-enabling city.

Footnotes

[1] Webber SC, Porter MM & Menec VH. Mobility in Older Adults: A Comprehensive Framework. Gerontologist. 2010;50(4):443-450. doi:10.1093/geront/gnq013

[2] The Center for Universal Design. Principles of Universal Design. North Carolina State University.

Speaker Information

Mr Brian CHUANG
Head of Project and Development
Link Asset Management Limited

BIOGRAPHY

Mr CHUANG, aged 52, is one of the co-heads of the project and development function who oversees jointly with another co-head the asset enhancement initiatives and asset development opportunities and explores business development potential of Link. Mr CHUANG joined the Manager in September 2010. He has over 27 years of experience in major architectural projects in the United States, Hong Kong, the PRC and Macau. Prior to joining the Manager, he was a Senior Project Manager of Sun Hung Kai Properties Limited. He also worked for Aedas Limited, Wong & Ouyang (HK) Limited and Dennis Lau & Ng Chun Man Architects & Engineers (H.K.) Limited. Mr CHUANG holds a Bachelor of Architecture from the University of Oregon. He is a Registered Architect in Hong Kong and also a member of The Hong Kong Institute of Architects.

ABSTRACT

Renovation of Shopping Centres and Fresh Markets for an Age-friendly Community

In response to Hong Kong's growing ageing population and to help build an age-friendly community, Link REIT recently completed a HK$211 million barrier-free access (BFA) programme for its entire portfolio of over 150 properties. The BFA programme was complemented by Link's fresh market revitalisation programme, which upgraded and modernised its fresh markets throughout Hong Kong to offer an improved trade mix and a wider range of products and price points. Combined with community engagement programmes, Link's efforts have not only delivered a good return on investment, but also a positive social impact.

Mr Brian Chuang, Head of Project and Development of Link Asset Management Limited, will share his experience in implementing asset enhancement strategies as well as his insights in building an inclusive and age-friendly community.

Speaker Information

Dr Jacob KAM
Managing Director – Operations & Mainland Business
MTR Corporation Limited

BIOGRAPHY

Dr Jacob Kam Chak-pui, 55, has been the Managing Director - Operations and Mainland Business since 1 May 2016 and a Member of the Executive Directorate since January 2011. He is responsible for overseeing the Company's transport operations in Hong Kong and its rail and property businesses in the Mainland of China. In addition, Dr Kam is responsible for overseeing railway operations standards and ensuring mutual learning of best practices among all the Company's railway operations globally. He joined the Company in 1995 and had held various management positions in various Divisions. Dr Kam was the Operations Director between January 2011 and April 2016. He holds a Bachelor of Science degree in Civil Engineering from the University of Southampton, and a doctoral degree in Mechanical Engineering from the University of London (University College London), both in the United Kingdom. He qualified as a chartered engineer in the United Kingdom in 1989. Dr Kam is a corporate member of both the Institution of Mechanical Engineers in the United Kingdom and The Hong Kong Institution of Engineers. He is also a chartered fellow of The Institution of Occupational Safety and Health in the United Kingdom and The Chartered Institute of Logistics and Transport in Hong Kong.

ABSTRACT

Innovation and Age-friendly MRT Railway Service

Hong Kong MTR was first established in 1975. Since then, the company is now a global railway investor, project manager and operator listed in the HK stock exchange. Hong Kong MTR now operates 230 km railway in HK, 960 km of metro and commuter railways, and over 900 km of intercity railways in Mainland China, Sweden, UK and Australia. We carry over 11 million passenger journeys globally every week-day.

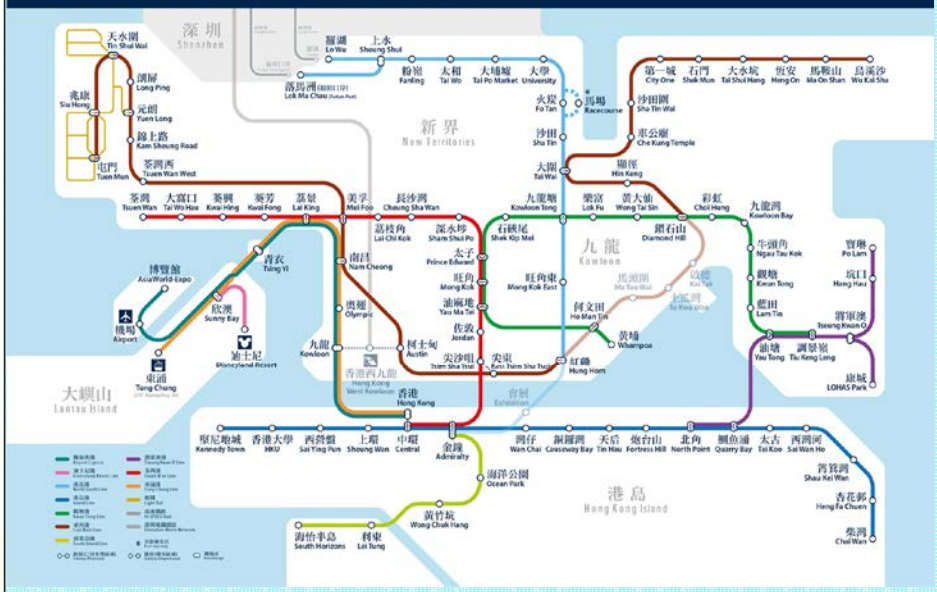
Anticipating the changing needs of customers and the aging population in Hong Kong, MTR is deploying a range of methods to understand their needs better. Building on its experiences and knowledge gained from its global operations, MTR will be introducing a range of innovative services and investing in various age-friendly facilities to meet customers' present and future needs.

This paper briefly reports the journey that MTR is taking to understand its customers better, and to meet their needs with innovative and practical means.

Innovative and age-friendly MTR Railway Service

Dr Jacob Kam
Managing Director – Operations & Mainland Business
9 September 2017

MTR Corporation Limited 香港鐵路有限公司



New lines under construction

- Express Rail Link
- Shatin to Central Link

Route length

Existing network: 231km

- **Metro 107km,**
- **Sub-urban 88km,**
- **Light Rail 36km**

Under construction: 43km

Operating performance (2016)

Daily patronage：5.6 million
Market share：48.4%
Train service delivery：99.9%
Train punctuality：99.9%*
Train Reliability: (7.327 million car-km per train failure causing delay ≥ 5minutes)
Escalator Reliability: 99.9%
Ticket gate reliability：99.9%

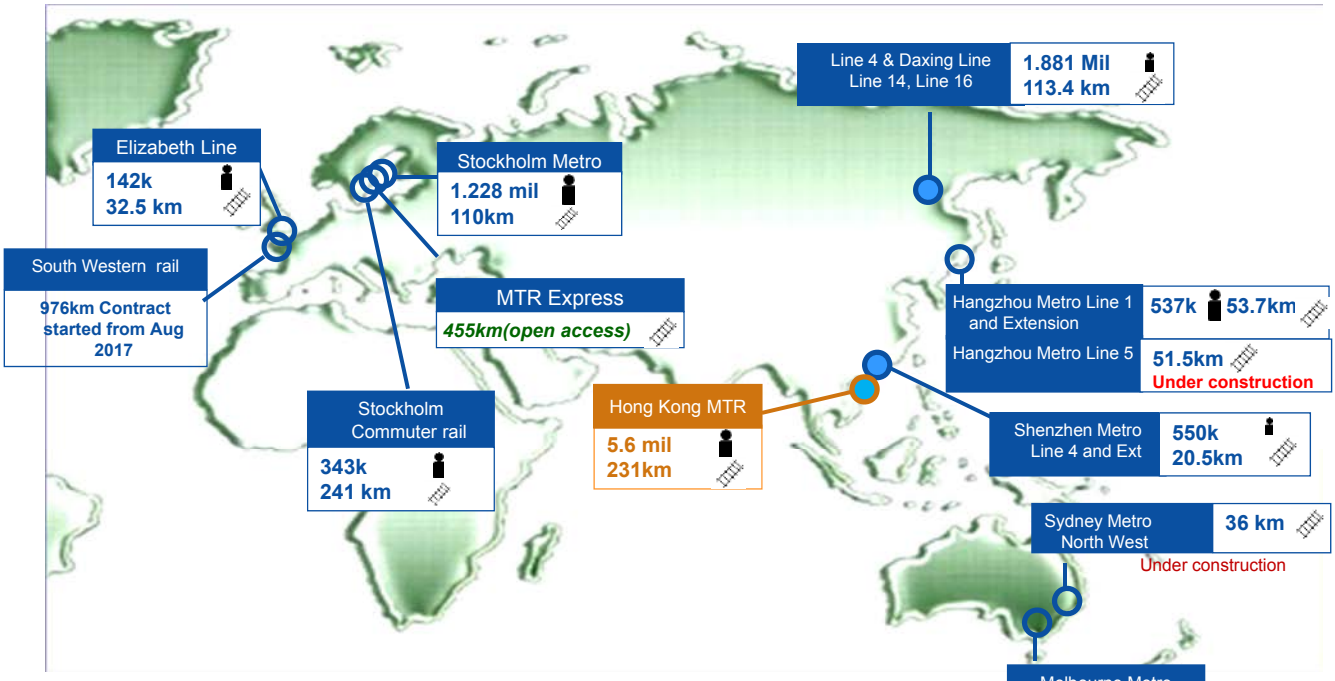
***Exclude external factor or passenger behavior-**

MTR Corporation 14/08/2017 Page 2

Current MTR Network (continued)

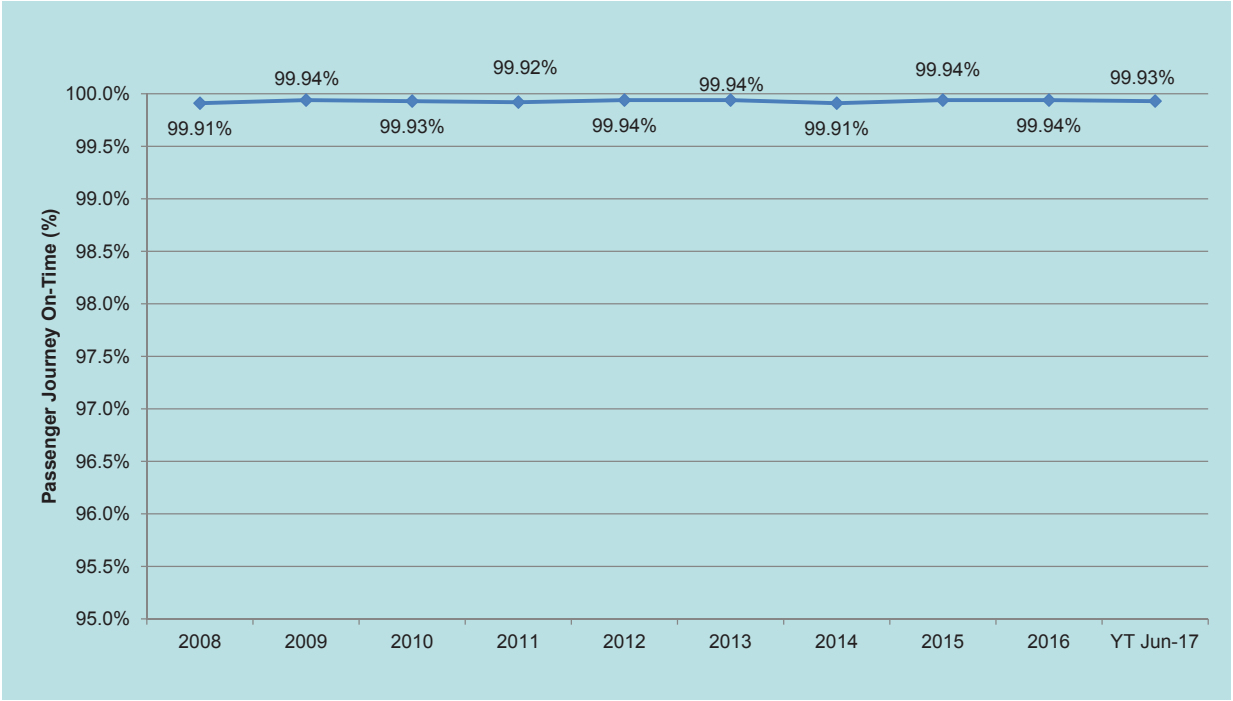
- **Intercity**
  - 3 through train routes
  - Hong Kong to Guangdong, Beijing and Shanghai

MTR Businesses in China and Overseas



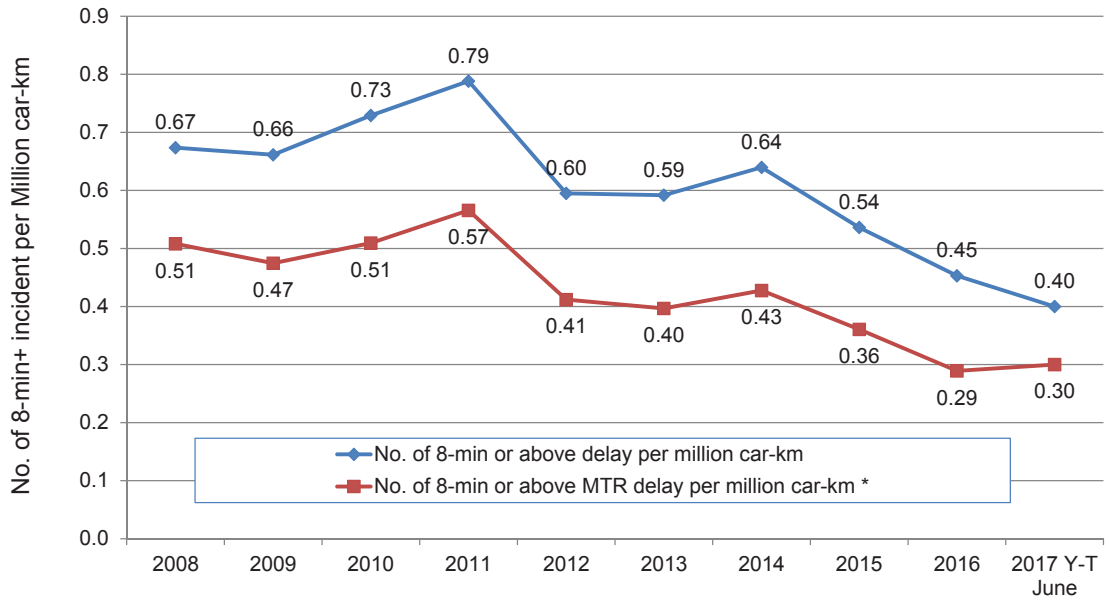
- Over 2,000km route length (exclude open access routes)
- Over 11 Million Passenger trips per weekday

On-Time Performance – Customers' Expectations



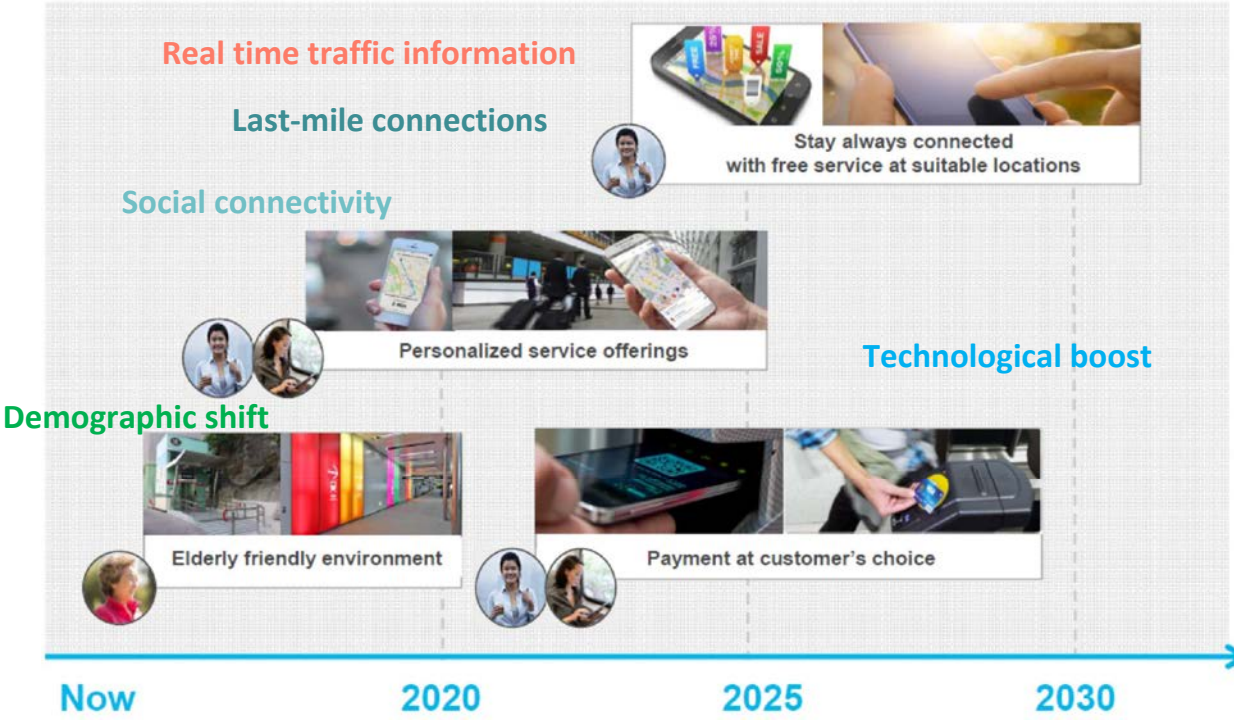
** (Exclude external factor or passenger behaviour)*

MTR's service reliability – 8-min delays per M carkm

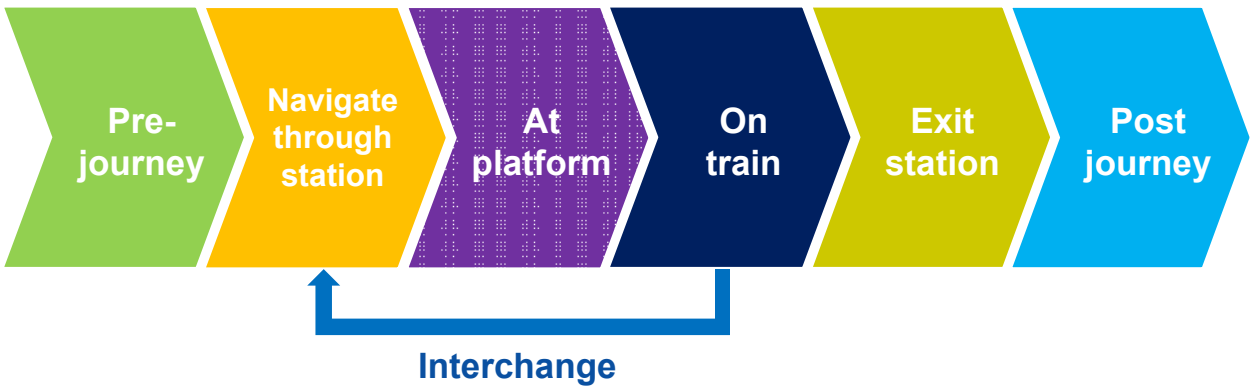


Note: * Including only incidents that are under MTR's control, and excluding incidents due to passenger actions or external causes, Heavy Rail only

Customer-centric services responding to megatrends



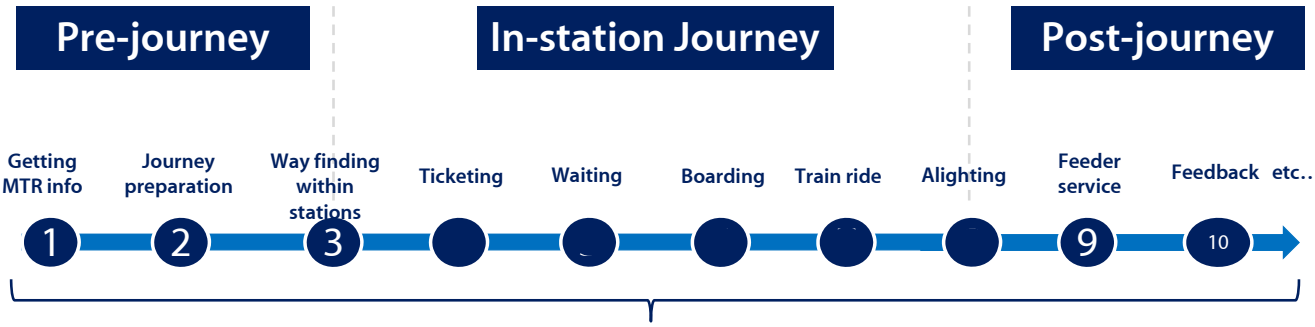
Customer Experience Mapping



Strategic Focuses for Customer Centricity

Holistic End-to-End Customer Journey Experience

Key Touch Points

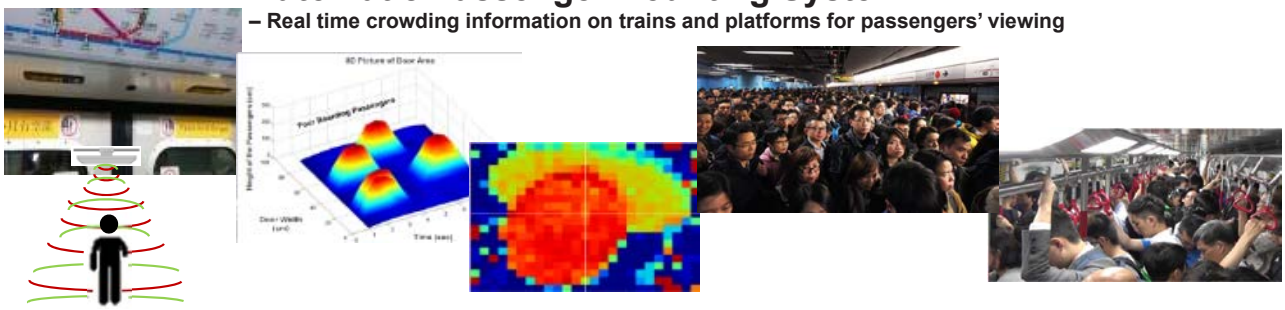


Expanded focus from in-station journey to cover pre- and post-journey stages

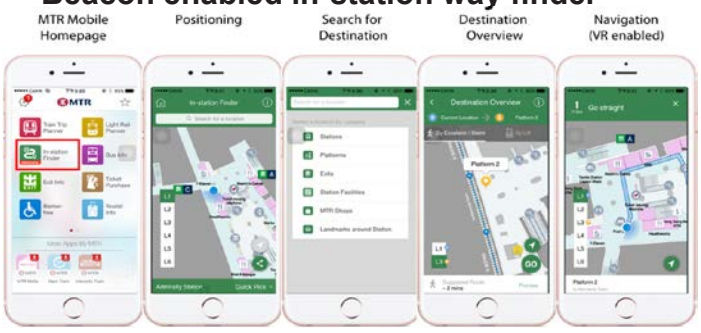
Technology improves customer experience

Automatic Passenger Counting System

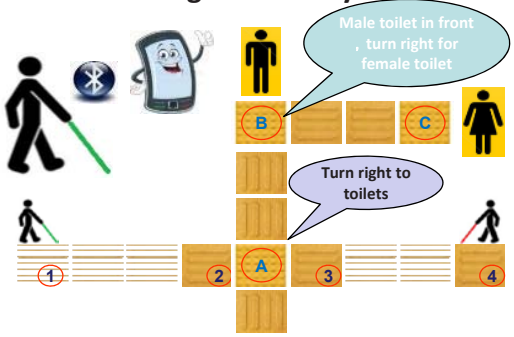
– Real time crowding information on trains and platforms for passengers' viewing



Beacon enabled in-station way finder



RFID Path-finding for Visually-Impaired

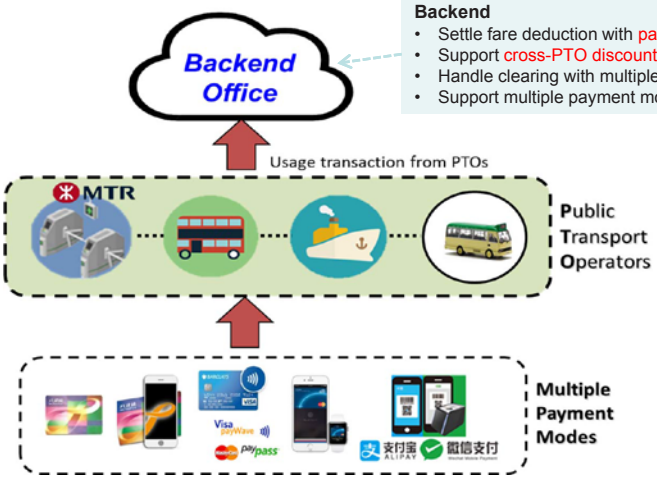


Technology will improve customer experience

Fare discounts for individual customer

Acquirers

Backend
- Settle fare deduction with pax account daily
- Support cross-PTO discounts
- Handle clearing with multiple Acquirers
- Support multiple payment modes



Station ID
Platform ID

Using iBeacon technology to remind passengers to get off trains

Information available on Train Windows (Embedded LCD screens)

Digital initiatives being tested

Improved Experience

- Beacon-enabled Indoor Navigation Service
- Alighting Reminder
- AES Next Bus Alert
- Fast Exit
- Traffic News Enhancement
- Ticket Suggestion
- MTR Club & Mobile Integration
- Chatbot
- Alternative Routes Suggestion
- In-train WiFi

Smart Operations 2.0

- Chatbot
- Alighting Reminder

Non-fare Revenue

- Beacon-enabled Indoor Navigation Service
- Alighting Reminder
- MTR Club & Mobile Integration
- Chatbot

Extra caring to Elderly

Pre-journey

I **receive an alert** when the facility in the station near my community is out of service

Entering Station

I can **easily enter the station**, even though I am less mobile

I can find my way easily and **walk through the station** at my own place and feel **safe**

During journey

I can easily find a **public toilet** in stations and can use the toilet safely

I can always find a **seat**

It is easy to **approach MTR staff** whenever I have questions and need help

I can **alight the train easily** at my own **pace**

Exiting station

I can talk to someone who **understands my needs** and can assist me

Hassle-free & easy travel

Age-Friendly Facilities

- More Lifts
- More Seats
- Larger Station Signs

Giant Toilet Sign, Exit Code and Lift Signage

Provision of age friendly facilities

Toilet Provision

- Refurbish staff toilet – non-slippery floor with handrail

Existing

Proposed

Provision of age friendly facilities

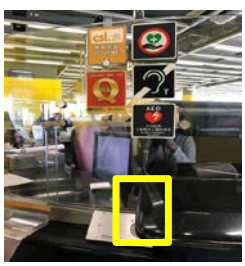
Information

- Giant Exit Code

- Giant Lift Signage (design to be developed)

- Giant Toilet Sign (at MEF)

- Provision of Magnifier at CuC



Innovations on how we manage our assets

Readying and enabling connectivity as Smart Railway

Future assets

Train services
- FAO and FAO-ready
- >99.9% reliability

Stations
- Ticketless travel
- Gates open for normal services
- Tailored for customer segments needs

Customer connectivity
- Personalized
- End to end / Total journey
- Value added services

Enabled by

Asset connectivity
- Integrated real-time data
- Interconnected hardware
- Mobile workforce solutions

Modularisation
- Plug & play
- Standardisation
- Efficient design and maintenance

Maintenance
- Automatic diagnostics and recovery
- Predictive and preventive
- Analytics & modelling

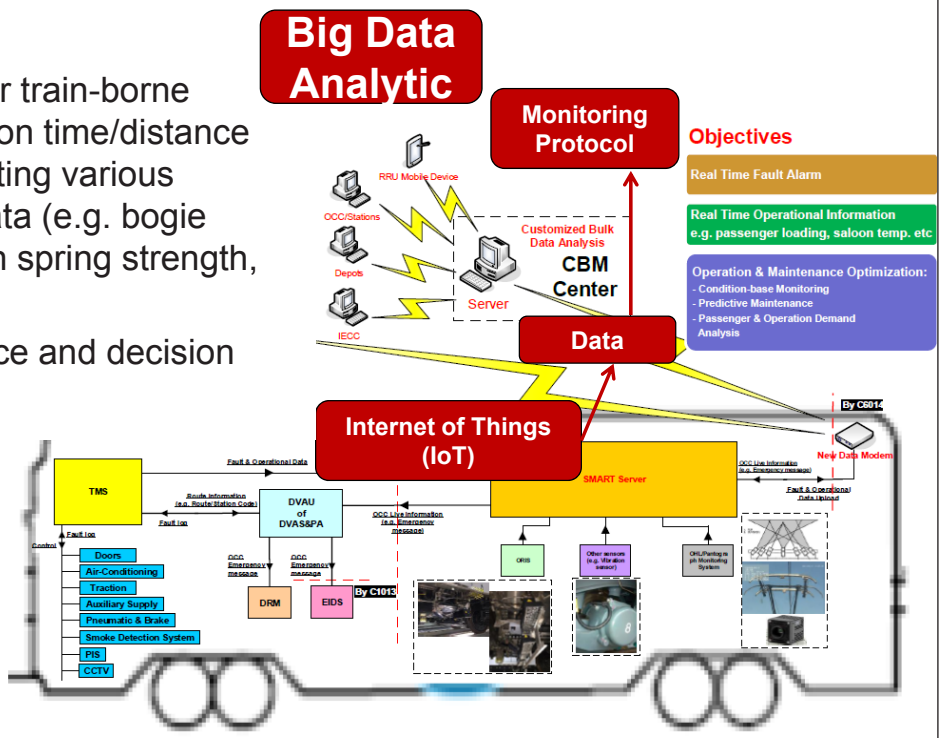
Resilience & continuity
- Resilience to extreme weather
- Obsolescence management
- Low energy consumption

Supported by

People
- Rewarding careers
- Attracting talent
- Multiskilling
- Global MTR family

Intelligent Trains

- Universal platform for train-borne sensor data – common time/distance domain platform hosting various sources of sensor data (e.g. bogie vibration, pantograph spring strength, track height etc.
- Facilitate maintenance and decision making



Smart use of technologies to enable asset intelligence

Foresighted Asset Strategy 2030 (FAST 2030+)

IoT
BIM
Simulation
GPS
Statistical analysis
Sensor technology
Robotics
Predict & Prevent

Instrumentation (Detection / Measurement) → Data → Transmission → Collection & Monitoring → Analytics → Decision

RFID
Respond & Recover
Laser scanning
Big Data Analytics
Artificial intelligence
Imaging technology

Concluding remarks

- Innovation and age-friendly improvements are all about improving customers experience
- We must know our customers, know their needs and try to delight them

MTR

Thank You!

Speaker Information

Ms Elaine TAN
Director
Strategic Research (R&D)
Urban Redevelopment Authority, Singapore

BIOGRAPHY

Ms Elaine Tan is the Director of Strategic Research at the Urban Redevelopment Authority (URA) Singapore. She currently spearheads URA's R&D efforts and directs key research programmes with generous funding support from the Land and Liveability National Innovation Challenge (L2NIC), under the auspices of the Research, Innovation and Enterprise Council (RIEC). To foster thought leadership and exchange, Elaine also launched the Urban Lab initiative as a platform to catalyse innovation and collaboration amongst the stakeholders across government, industry and academic circles.

Prior to this, Elaine established the Lee Kuan Yew World City Prize and the President's Design Award. She also developed funding and engagement programmes, and produced publications to advance the state of architecture and urban design excellence in Singapore.

Elaine studied Architecture and Urban Design at the National University of Singapore and holds both a Master's degree in Urban Design and a Master's degree in Public Administration from the Lee Kuan Yew School of Public Policy.

ABSTRACT

Building Age-friendly, Inclusive Communities for All

Over the next few decades, Singapore's society will undergo a profound change. Our population will age rapidly. The number of seniors over 65 years old will double to 900,000 by 2030. At the same time, falling birth rates and a shrinking workforce will mean a higher dependency ratio and smaller support networks to care for our seniors as they age. Singapore is not alone in this. As we understand how our society will change in the coming years, it is helpful to look to other super-aged countries and study how we can cope with the challenges of an ageing population. Despite the challenges faced, we have seen how our seniors can be an asset to society and a positive force when we can give them the support they need to contribute to society. Our goal is to tailor our efforts to their differing needs and to help them stay healthy and active for as long as possible. For seniors who are more frail, our aim is to deliver the care that they need to live comfortable, dignified lives. Collectively, Singapore is working on various efforts to prepare for the ageing population, so as to build an age-friendly and inclusive community for all.

Demographic trends

1. Over the next few decades, Singapore's society will undergo a profound change. Our population will age rapidly. The number of seniors over 65 years old will double to 900,000 by 2030. 1 in 4 residents will be seniors, up from 1 in 8 today. The average life expectancy will also increase to an average of 82 years old, of which our seniors can expect to enjoy healthier lives. Of these seniors, we expect that around 80,000 of them will have some form of dementia[1] and 83,000 will also need help with activities of daily living (ADL)[2].

2. People are also likely to have smaller families, with fewer or no children. As a result, seniors of the future will have smaller support networks to care for them when they age. The number of senior living alone will increase from 35,000 in 2012 to 83,000 in 2030. Many may need to rely on external sources for help. Fewer children will also mean a higher dependency ratio: by 2030, this will drop to only 2 working adults per senior. It will also be difficult to find enough healthcare staff to staff our hospitals, clinics, and nursing homes. Yet there are plans to double the number of community hospital beds and to increase nursing home capacity by more than 70%.

3. Singapore is not alone in this. Many countries, including Sweden, are facing similar issues today. Some countries, like Japan, have been dealing with the "silver tsunami" for several decades. As we try to understand how our society will change in the coming years, it has been helpful to look to these super-aged countries, and study how they cope with the challenges of an ageing population.

4. Yet despite the challenges that these countries face, they have also shown us that seniors can be an asset to society. With the right support, they can even be a positive force for social and economic development. In Singapore, we are lucky to have a future elderly demographic that will make this transition easier: our future elderly will be educated, tech savvy, and well integrated into the knowledge economy. This will make it easier for them to keep their skills relevant and share their expertise.

5. Our role as the government is to give the elderly the support they need to continue contributing to society. Since the elderly of the future will span a wide age and health spectrum, we will need to tailor our efforts to meet their differing needs. For example, seniors who are healthy can continue living independently at home, with some medical assistance. Our goal is to help our seniors stay healthy for as long as possible and continue being economically and socially active. Other seniors may have more pressing health issues, and may need more advanced medical care. For these seniors, we aim to deliver the care that they need to their homes, and help them live dignified and comfortable lives.

6. URA's work is only one part of the efforts to prepare Singapore for the ageing population. The Ministry of Health is spearheading this movement, and has released the Action Plan for Successful Ageing, which is a suite of elderly-friendly initiatives spanning all areas of the government. For the rest of my presentation, I'll touch on some of the urban planning-related policies, and how better planning and design of our homes and towns can make a difference and improve the lives of our seniors.

Maintaining independence and connection to the community

7. Our vision is to create housing estates that enable seniors to continue living in their own homes, even as they age. To make seniors' homes safer, we are retrofitting them with elderly-friendly design elements such as grab bars, ramps, and slip-resistant floorings. Dedicated senior housing units are also outfitted with emergency alert systems, so that the residents can quickly call for help in emergencies.

1 Source: The Straits Time, published Mar 25, 2015, url: http://www.straitstimes.com/singapore/health/one-in-10-people-over-60-have-dementia-new-singapore-study-claims
2 Source: TODAY, published Feb 4, 2014, url: http://www.todayonline.com/singapore/83000-may-need-help-daily-living-2030

8. We also want to see how we can introduce care services into homes. Since seniors may develop some mobility issues over time, and may need help with daily tasks, home-based care services can help seniors continue living in their homes. Other seniors may want to move in with their adult children as they get older. At the same time, they may be used to living on their own, and may still want to maintain their independence. To cater to this group, we have introduced 3-Generation flats in our housing estates, which are designed to house larger, multi-generational families under the same roof.

9. Though we try to help seniors stay healthy for as long as possible, we also recognise that some will still need advanced medical care beyond what is available at home and will need dedicated nursing care. Our aspiration is to build quality nursing homes that take into consideration person-centric care and to make them feel as home-like as possible to be a pleasant environment where the elderly can be cared for, and where family and friends can visit them. We are also studying designs to better integrate nursing homes into their neighbourhoods and to make them feel part of the larger community.

10. Aside from improving the built environment, we are also searching for innovative technology that can improve healthcare provision. For example, home-based diagnostic tests and tele-health systems can help seniors take ownership of their own health and improve the convenience of replenishing and taking their medications on time.

Designing towns to encourage activity and ensure safety

11. On a larger town scale, we want to create an environment where seniors can go about their daily routines independently and with ease. By planning for better connectivity and more walkable towns, we can make it easier for seniors to walk to the shops and services that they need regularly. Having key amenities within walking distance will also encourage seniors to walk more and stay fit.

12. As planners, we understand that the life cycle of towns evolve. Hence we are studying how we can design flexible spaces that can be converted as the needs of the users change. These can be integrated developments that may initially function as social gathering spaces for the younger, more ambulant elderly. As the neighbourhood matures, and the elderly require more care, the spaces can be converted to more eldercare functions.

13. To give seniors more assurance about walking, we have Silver Zones in estates with a high number of elderly. These zones have road safety enhancements to make it safer for pedestrians, such as speed humps to slow down vehicles, special markings on footpaths to guide the elderly, and lifts at pedestrian overhead bridges. We are also looking at how we can introduce more direct bus services and reduce the number of transfers seniors need to make to get to their destination.

14. For seniors who have difficulty in walking, we are studying how we can introduce alternative modes of transportation. Given the recent advancement in technology, we are also studying driverless cars to see if they are viable for seniors who can no longer drive.

Inviting social spaces for interaction and bonding

15. Aside from helping seniors continue living and working in the community, we also want to help them stay socially connected. To encourage seniors to socialise with their neighbours, we have introduced Senior Activity Centres, which are dedicated recreational spaces integrated into our housing estates. These centres organise social activities to keep the seniors active, and provide seniors with a convenient gathering space to meet their friends.

16. We also want to use our social spaces as a way to encourage intergenerational bonding. For example, our Community in Bloom gardens are spaces where people of all ages can come together and collectively tend to the gardens. Another Family Service Centre

also serve as a 'living room' for the surrounding community of retired senior volunteers and children and youths from low-income families. Aside from providing seniors with enjoyable and healthy exercise in the gardens and meaningful interaction with the younger generation, these spaces also help to break down social barriers and foster community spirit.

17. We also plan to roll out more elderly day care centres and nursing homes in the near future. Taking reference from successful overseas examples, we are also exploring ways to integrate eldercare with childcare centres, to encourage bonding across generations. Studies conducted have shown that such interactions improve mental and physiological health, and bring the community closer together. Currently, there are several projects in Singapore and we hope to scale up these plans and programmes over the coming years.

Conclusion

18. Through these efforts, we hope to be able to turn the silver tsunami into a silver lining, and help our seniors stay happy, healthy, and hopeful in the years to come.

Speaker Information

Ir WAI Chi Sing, GBS, JP
Managing Director
Urban Renewal Authority

BIOGRAPHY

Ir Wai Chi Sing is an engineer by profession. He joined the Hong Kong Government in August 1980, and has since served in the Transport Department, the Highways Department, and the former Environment, Transport and Works Bureau. He was the Director of Highways from November 2006 to June 2010 and was Permanent Secretary for Development (Works) from June 2010 to April 2015 before retirement. Ir Wai has been appointed the Managing Director of the Urban Renewal Authority since 15 June 2016.

Ir Wai holds a master's degree in transportation engineering from Purdue University in the United States. He has professional qualifications in civil, structural and geotechnical engineering.

ABSTRACT

Urban Renewal for More Inter-generational Harmony

The Government's projections show that by 2040, about one third of the Hong Kong population will be elderly persons. The ageing situation is more or less the same for buildings, with about one in every three buildings reaching the age of 50 or over by 2040. The implications of such "double ageing" phenomena and the measures required to address them are increasingly high on the public policy agenda.

Urban renewal offers a way out to turn the "double ageing" challenges into opportunities. By re-planning and restructuring urban areas, retrofitting them with modern housing, commercial and community facilities and re-creating quality public spaces, a district-based renewal approach could add new values and meanings to old urban areas while respecting local characteristics, benefitting not only the local community but also the wider society. With inclusionary zoning and universal design concepts, the urban transformation process can help promote active ageing and inter-generational bonding by removing the unnecessary boundaries and barriers.

To achieve the optimal results, revitalization of the physical environment needs to be complemented by social platforms to unleash the potential of elderly persons and to further their contributions to the society. Future generations of elderly people will be healthier, better educated and more connected to society, opening up new economic and social opportunities for themselves and for the community as a whole.

Over the years, the Government has taken various initiatives to encourage active ageing. As a primary agency to address urban decay in Hong Kong, the Urban Renewal Authority in collaboration with its strategic partners can also make important contributions to this worthwhile cause by re-creating the physical and social infrastructures in the urban core through its renewal projects and initiatives.

"Double Ageing" in Hong Kong

The Government's projections show that by 2040, about one third of the Hong Kong population will be elderly persons, compared to about one sixth of the population as of 2016. The rapidly growing elderly population has implications for the dependency ratio, economic growth and public finances.

The ageing situation is more or less the same for buildings, with about one in every three buildings aged 50 or over by 2040. In terms of absolute number, the stock of buildings in this age bracket will escalate from 9,000 in 2015 to 23,000 in 2040. The current throughput of the redevelopment work of the URA and the private sector very much lags behind the rate of ageing of buildings in Hong Kong.

The challenges of the "double ageing" phenomena and the measures required to address them have been highlighted in the Government's consultation documents in recent years, including "Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030", "Population Policy" and "Retirement Protection Forging Ahead".

Turning the Challenges into Opportunities

Urban renewal offers a way out to turn the "double ageing" challenges into opportunities. By replacing and retrofitting old and dilapidated urban areas with modern infrastructures, developments and facilities under an integrated and coordinated approach, urban renewal can be leveraged as a strategic vehicle to improve town planning and space utilization while advancing smart city, placemaking and sustainable developments. The urban regeneration process can also help promote active ageing and inter-generational bonding by removing the unnecessary physical and social barriers.

Opportunity One: Restructuring and Re-planning of Urban Areas

Restructuring and re-planning concerned urban areas is the first and foremost objective set out in the Urban Renewal Strategy, a high-level government policy document guiding urban renewal in Hong Kong.

Assuming that buildings reaching the age of 50 will all be demolished to make way for redevelopment from now till 2040, about 10,000 buildings will undergo the renewal process each decade, creating plenty of opportunities to re-generate and revitalize the physical environment for provision of modern housing, commercial and community facilities and creation of quality public spaces for the benefit of community stakeholders.

Urban renewal has to be undertaken in the context of the overall town planning process, which broadly comprises development strategies at the territorial level and various types of statutory plans at the district level.

At the **territorial planning** level, the Government's consultation document "Hong Kong 2030+" has underlined the need to step up rejuvenation of dilapidated urban areas to address the enormous magnitude of the ageing building stock. Nonetheless, it has not suggested any solution to tackle such a problem, let alone outlining specifically how urban renewal can contribute to strategic territory-wide planning goals.

In fact, urban renewal may impact on the distribution of **population-to-employment ratios** across the territory. The ratio of population to employment opportunities is substantially higher in the metro area, compared to the four other regions of the territory. The **concentration of jobs in the metro area** is imposing much **tidal pressure** on the transport infrastructure. The opportunities to relieve such tidal pressure is worth exploring in the context of urban renewal initiatives in the metro area.

At the **district planning** level, development controls are mainly imposed through Outline Zoning Plans (OZPs) which indicate the land use zones, development parameters and major road systems of individual planning areas. In practice, preparation of new OZPs and review of existing OZPs have proven to be long drawn processes, and where there is a review opportunity, piecemeal rather than holistic changes were often made due to the diverse interests of stakeholders and practical considerations involved.

The 35-year-old **East Kowloon Corridor** is a good example of an above-ground infrastructural constraint that should have been removed through district planning initiatives in the past decade. Residents especially those living in lower floors on both sides of the expressway have been seriously affected by vehicular traffic noises and emissions. It is a missed opportunity that demolition of the

Corridor was not included as a major improvement item in the Urban Renewal Plan promulgated by the District Urban Renewal Forum for Kowloon City three years ago.

Opportunity Two: Use of Underground Spaces

Underground development is an important tool to develop and reshape urban areas to meet the challenges of the future. District-based renewal initiatives open up opportunities to place infrastructure and other facilities underground, thereby freeing up the surface environment to realize worthwhile functions such as promoting walkability, social mix, public convenience and sustainable resources utilization, as well as reducing traffic congestion and vehicular pollution, etc.

Overseas experiences provide useful references for Hong Kong to promote more extensive use of underground spaces. The **Helsinki Underground Master Plan** indicates the space allocation for existing and planned **underground spaces for traffic and utility tunnels, loading/unloading and parking areas, utility and storage facilities, recreational uses, maintenance depots**, etc. Buildings located in the downtown are encouraged to develop underground links and loading/unloading areas to connect with the underground tunnels/facilities built according to the Master Plan, so that vehicles providing maintenance and delivery services can access the buildings underground without using the surface roads.

Waste collection is a major application area for underground spaces. As waste management legislations get more stringent all over the world, more governments and businesses are seeking to move away from the conventional system of collecting and transporting wastes by road to the alternative of taking the whole thing underground. Specifically, users of **pneumatic waste collection systems** deposit their refuse into waste inlets located around the operating area. The trashes are temporarily stored in the waste inlets till the next emptying cycle, after which they would be transported along underground pipelines into containers at a waste station. When full, the containers would be conveyed to landfills or incinerators for further processing using underground service tunnels.

Opportunity Three: More Flexible Planning for Use of Air Spaces

While there have been a few successful cases of air rights transfer involving historical buildings in Hong Kong, the existing planning control regime is inherently not conducive to such transfer involving stakeholders in urban renewal.

It is worth studying if market-driven transfer of development rights across sites in urban areas can be further promoted, without compromising the district-wide floor to area ratios and other desirable planning objectives. For example, a new planning instrument may be introduced to facilitate creation of a trading platform for transfer of air rights between contributing and receiving sites in designated areas. While the Planning Authority would retain overall control on development density in the designated areas, developers and property owners are free to reach deals for voluntary acquisition and relinquishment of the air rights. The contributing and receiving sites do not necessarily have to be contiguous and their pairing up would be allowed so long as they do not compromise certain overriding planning principles.

A major challenge of urban renewal is to find interim spaces to accommodate the households and operators displaced from a redevelopment project. Given the already densely built urban core, ideally the solution spaces for such displacement process should come within the same locality as the redevelopment. It is worth exploring the feasibility of **temporarily increasing the development density of certain suitable locations** in the same district or sub-district of the redevelopment so that interim or transitory facilities can be provided to cope with the rehousing or decantation demands during redevelopment. The whole neighborhood does not get over-developed at any time because there is no overall increase in building volume throughout and after redevelopment.

Opportunity Four: Application of Smart City Concepts

To address the urban decay problem in Hong Kong more effectively, new measures need to be identified to enhance the efficiency of land use and to create an environment conducive for relevant parties to initiate renewal works. Such an environment can be created through the use

of planning tools such as upzoning, rezoning, plot ratio transfer and trading, etc. Implementation of these planning instruments will lead to higher density in certain parts of the old urban areas.

While **high density development** is conductive to sustainable development by optimizing land use and reducing carbon footprint, it will pose infrastructural capacity issues on utilities, storm water collection, sewage treatment, etc. **Smart measures** are therefore required to address such side effects of higher density development. For example, it is worth exploring the use of community energy systems, grey water recycling and distributed treatment systems for provision of additional capacity.

In a high-density building environment, **natural ventilation** can be improved through innovative design features such as urban windows, tower orientation and façade opening. It may be possible to convert these passive openings into active ones using smart tools such as **bladeless fans** for higher wind permeability and cross ventilation. Such smart tools may provide a scientific basis to support higher density development for areas undergoing urban regeneration.

A **smart environment** conducive to inter-generational bonding also means embracing **universal design** in urban renewal, so that people of different generations with different physical abilities can live in harmony. As a result, public spaces would be designed to meet the needs of a wider clientele rather than a confined group of users, whereas under-utilized playgrounds and outdoor pitches would be converted into recreational facilities for all ages, e.g. fitness equipment and pavilions.

Greening is another important strategic element of smart urban renewal. When open to the public, green spaces contribute to improving the quality of life in urban areas, providing a wide range of social, cultural, environmental and economic benefits. High-quality green spaces in urban areas can reflect and promote the identity and culture of a local community. In addition to promoting citizens' welfare and ecological education, gardens and green spaces can serve important eco-friendly functions such as pollutant mitigation, noise reduction, microclimate improvement, biodiversity enhancement and conservation.

Smart living initiatives can empower the elderly to age in their own communities and support general citizens' well-being. Retrofitting of elderly-friendly technologies, furniture and fittings such as smart detectors and sensors, and remote health monitoring devices can help the elderly live in their homes comfortably, healthily and independently while remaining closely connected to the community and their family. The concept "**Ageing in place**" can also be facilitated through provision of barrier-free facilities in individual flats, common areas of buildings and public places, including covered or sheltered public walkways and connection facilities, as well as installations and machines to support social participation by elderly persons with certain disability.

Opportunity Five: Placemaking

By incorporating quality public spaces into developments, urban renewal projects can add much value to a community through **placemaking**. In line with the people-first principle set out in the Urban Renewal Strategy, a placemaking process connects people and the places they share, bringing out the physical, historical, cultural and social identities that define a place and support its on-going evolution.

We can draw inspirations from successful placemaking projects overseas such as the famous Cheonggyecheon in Seoul. It involved removal of an elevated highway, restoration of a nearly dry stream, creation of public open spaces and tourist attractions, re-introduction of nature to the city and promotion of a more eco-friendly urban design, all for the benefit of the Seoul citizens.

Opportunity Six: Inclusionary Zoning and Mixed Development

Inclusionary zoning (IZ) is a land use planning tool that incentivizes and/or requires developers to set aside a certain percentage of housing units in new or rehabilitated projects for low- and middle-income residents. Most IZ programs offer developers some forms of incentives such as density bonuses, expedited approval, and fee waivers. Integration of affordable units into market-rate projects creates opportunities for households with diverse socio-economic backgrounds to live in the same developments or neighborhoods. When applied to urban renewal, IZ is an effective instrument to contain gentrification by mitigating the displacement of low-income households and elderly persons from the renewal areas.

As opposed to single-use zoning, a mixed land-use strategy aims at developing a range of compatible activities and land uses close together in appropriate locations and flexible enough to adapt over time to the changing market. A **mixed development** invariably features some combinations of residential, commercial, industrial, office and other uses. Such development enhances the quality and vitality of urban centers by boosting the local economy, creating local jobs, enhancing integration of people of different ages, classes and incomes, reducing car dependency, etc.

Opportunity Seven: Promoting Active Ageing

In the absence of any policy intervention, an ageing population will lower the labour force participation rate. It is important to tap the valuable pool of elderly resources to create new impetus to the economic and social development of the society. Future generations of elderly people will be healthier, better educated and more connected to society, opening up new economic and social opportunities for themselves and for the community as a whole. During urban renewal, revitalization of the physical environment needs to be complemented by **revitalization of the social environment to unleash the potential of elderly persons and to further their contributions to the society**.

Engaging in an active life is essential for an elderly to stay healthy physically and psychologically. There are many facets of active ageing. Some **elderly persons may still prefer to work**, albeit not on a full-time basis. Retired elderly persons provide a pool of volunteers to serve other persons in need. Undertaking **volunteer services** allows more flexibility in time commitment while making good use of their wealth of experience, knowledge and expertise built up over the years.

A few examples of the social platforms that may be built in connection with urban renewal to facilitate employment and engagement of elderly persons in remunerated or voluntary work are as follows.

a) **Senior Workforce Development Service Centers** provide senior recruitment and employment services including matching seniors looking for employment and enterprises seeking to recruit them as the core, training and retraining services required for employment, as well as personal advices on employment and business.

b) **Volunteer Social Service Redemption Schemes** feature life-long giving and taking programmes to encourage people to volunteer to provide social services, e.g. home cleaning, meal preparation, household appliance repair, accompanying services for hospital visits, etc. and their volunteer service hours will be registered. When a registered person needs others' services in future, he/she can redeem the volunteer service hours earned for the services required.

c) **Retired professionals such as engineers, surveyors, planners and architects** may also extend their contributions to the society through development of volunteer platforms for participation by those with the required qualifications and/or accreditations. Apart from addressing the occasional shortage of supply of services in the relevant trades, these platforms may be dedicated to grooming younger professionals, undertaking advocacy work to advance development of the trades or for other worthwhile causes.

Concluding Remarks

The "Double ageing" phenomena do not necessarily impose burdens on the society in a one-sided manner. There are indeed plenty of opportunities that come with the ageing built environment and population. Different sectors of the community should think through and get prepared to capitalize on the opportunities.

Over the years, the Government has taken various initiatives to promote inter-generational harmony. As a primary agency to address urban decay in Hong Kong, the URA can also make important contributions to this meaningful cause through its urban renewal projects and initiatives. This paper has identified a number of major opportunity areas in terms of regeneration of the physical environment and revitalization of the social environment. Given the multi-faceted, cross-cutting nature of urban renewal, concerted efforts by relevant community stakeholders are necessary and indeed indispensable to bring the opportunities to fruition.

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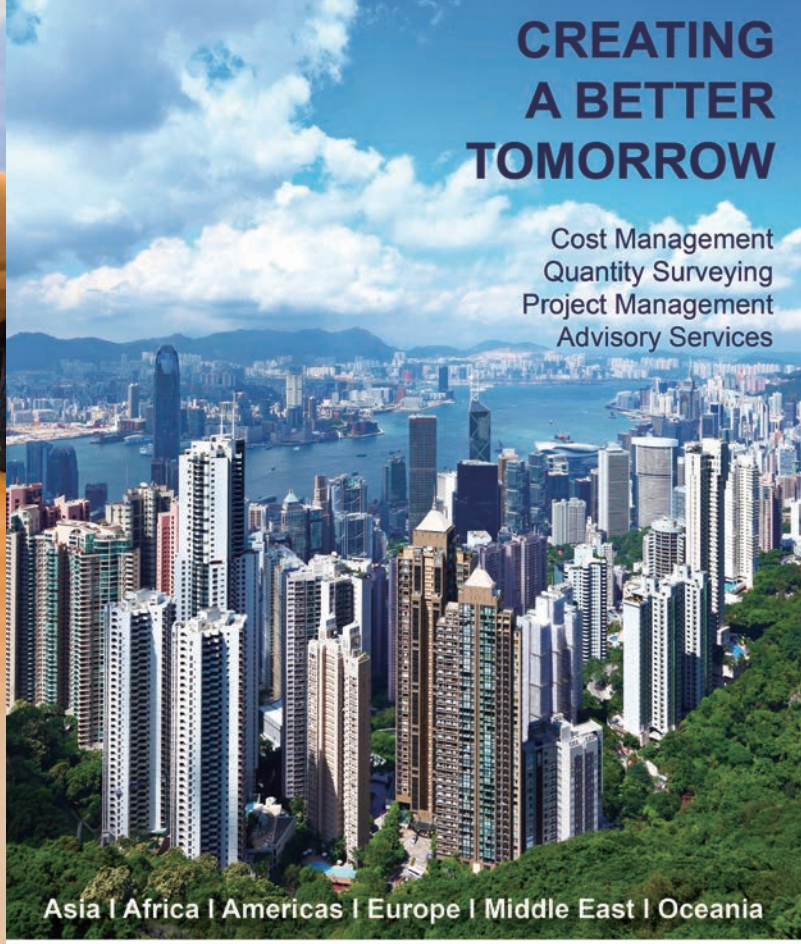

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Introduction of the HKIS

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, the Surveyors Registration Ordinance (Cap. 417) was passed and a Registration Board was set up 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 land supply, unauthorised building works, building safety campaign, property management, town planning and development strategies, construction quality and housing.

The HKIS membership has now grown to over 9,000. As at 1 August 2017, the number of members reached 9,584, including 6,391 Corporate Members consisting of Fellows and Members – distinguished by the initials FHKIS and MHKIS; 78 Associate Members – distinguished by the initials AMHKIS; and 3,115 probationers and student members.

To qualify as a corporate member of the Institute, surveyors must possess a recognised academic qualification; complete supervised professional training within strict guidelines for a minimum period of 24 months, 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 and one Young Surveyors Group:

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

The Institute has established and continues to expand its presence in the international scene through participation in various international platforms as well as reciprocity relationships with other national surveying bodies and through membership in relevant world bodies and international organisations 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 the Institution of Surveyors, Malaysia, of the Surveyors' Alliance Asia which was inaugurated in November 2004.

The Institute has reciprocal agreements with:

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

HKIS is a member of the following international organisations:

- International Cost Engineering Council
- International Society for Photogrammetry and Remote Sensing
- International Valuation Standards Council
- Pacific Association of Quantity Surveyors
- World Association of Valuation Organisations
- World Organisation of Building Officials

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.

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