

## 2 Universal Accessibility in the Built Environment





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### 2.1 The Challenge in Hong Kong

Hong Kong is one of the most densely populated cities in the world. Faced with scarcity of land and high development density, creating safe, continuous and sustainable barrier free access in Hong Kong is no easy task. That is why in addition to conventional barrier free provisions, a more holistic design approach should be adopted to improve accessibility in the built environment. Architects, planners and designers have a very important role to play in that respect.

Universal accessibility is derived from understanding the needs and lifestyles of people from all sectors of the

community and applying inclusive design concepts. There are different approaches and modern technologies can assist designers in achieving the goal. For example, the use of multi-sensory elements could be further explored as a means of engaging users and enriching one's journey through an external space; tactile or other sensory cues could be provided in areas where the provision of tactile guide paths may not be feasible or desirable; interactive multi-media maps could be brought into play; raised flooring systems could be used to mitigate level changes; etc.



2.1a A holistic approach is needed when designing for a universally accessible environment

## 2.2 Aging Population

Hong Kong, like many cities in the world, is facing the challenge of having an aging population. With the trend of conscious healthy lifestyle and advancement in medical care and technologies, the life span of an average person has extended.

According to the figures of the 2006 population statistics<sup>1</sup> from the Census and Statistics Department, the elderly population of Hong Kong is on the upward

trend. The percentage of total population aged 65 and above will increase from 12% in 2006 to 26% in 2036. The aging trend is also reflected by the median age of the population increasing from 40 in 2006 to 46 in 2036.

Based on statistics on Domestic Households<sup>2</sup>, the Thematic Report on Older Persons, and Domestic Households with Older Persons<sup>3</sup>, the projection of total domestic household number with older persons can be

<sup>1</sup> The Hong Kong Resident Population, 2006, Census and Statistics Department, Government HKSAR

<sup>2</sup> Domestic households by household size, 2006, Census and Statistics Department, Government HKSAR

<sup>3</sup> Thematic report-Older Persons, Domestic Households with Older Persons by Household Size and Number of Older Persons, 2001, Census and Statistics Department, Government HKSAR

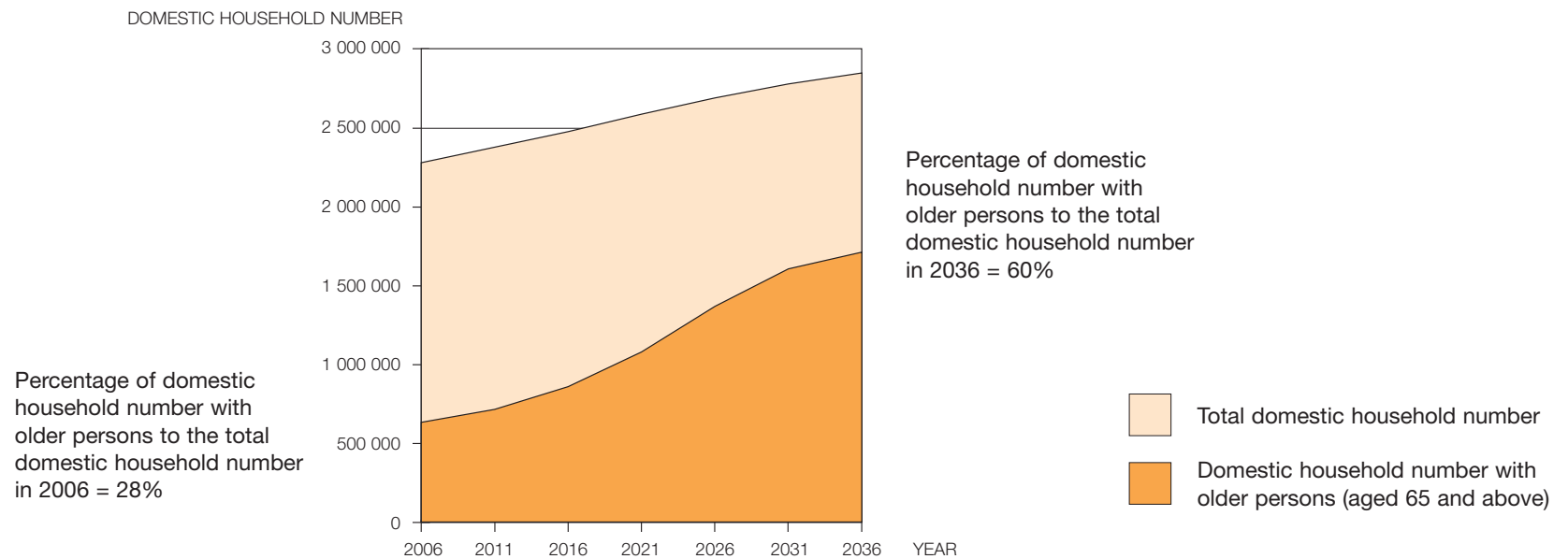
Year	Projection of Population <sup>1</sup>	Percentage of population aged 65 or above <sup>1</sup>	Population aged 65 or above	Average size of the total domestic household population <sup>2</sup> = 3.0	Average number of older persons in domestic household with older persons <sup>3</sup> (population aged 65 or above) = 1.3
				Projection of total domestic household number = Population / Average domestic household size	Projection of total domestic household number with older persons = Population of older persons / Average number of older person in domestic household with older persons
2006	6 857 100	12	822 852	2 285 700	632 963
2011	7 153 500	13	929 955	2 384 500	715 350
2016	7 450 000	15	1 117 500	2 483 333	859 615
2021	7 784 000	18	1 401 120	2 594 667	1 077 785
2026	8 094 000	22	1 780 680	2 698 000	1 369 754
2031	8 360 700	25	2 090 175	2 786 900	1 607 827
2036	8 570 200	26	2 228 252	2 856 733	1 714 040

2.2a Projection of domestic household number with older persons (aged 65 or above)

worked out (2.2a). It indicates an increase in the number of domestic household with older persons from 28% in 2006 to 60% in 2036 (2.2b).

Administrators, developers and designers have to face the challenge brought on by the changing structure of population in Hong Kong when designing residential development and community facilities.

With better provisions of access in Hong Kong, elderly people are more incline to participate in communal activities. It is evident in recent years that elderly people are less home bound and they can be a strong market force. Further improvements in accessibility can enrich their lives and strengthen their self-esteem and independence.



2.2b Projection of domestic household number with older persons (aged 65 or above)

## 2.3 Universal Accessibility in External Areas, Open Spaces and Green Spaces

The connection between destinations is an essential part of the travel chain. It is the key to attaining universal accessibility in the built environment. Open and green spaces are much needed relief in a high-density city like Hong Kong. In addition to functional and recreational purposes, they form important links in the built environment. By having improved linkage to the external areas and better access to buildings, people would be able to engage more actively in the society.

Two of the key factors to be considered in universal accessibility in external areas are continuity and connectivity. While individual buildings may be provided with barrier free access, it is equally important to consider the linkage between buildings. They should never be treated as leftover spaces. A continuous accessible travel path should be maintained to facilitate everyone to get from the starting point to the final destination, and to enjoy all the facilities that path has to offer along the way.

Formulation of an access strategy is crucial during the early stage of design when planning the built environment. Accessibility is not just the elimination of a

few physical barriers along the travel chain, or the provision of barrier free access and toilets for people with disabilities. It should be a major consideration in the early planning and conceptual design.

Efforts should also be made to upgrade existing facilities to barrier free standards. In fact, improvements to some facilities, such as addition of lifts to link bridges and provision of tactile guide paths and warnings at pavement, can already be seen around Hong Kong.

More innovation and creativity is needed in the inclusive design of external spaces. Provisions that work well in an internal setting may not be entirely appropriate for external environments. Some obvious factors to consider are the effects of weather, and the different conditions between daylight and night time.

On the other hand, an external environment can offer some experiences that may not be commonly found in an internal space. For instance, the natural sights, smells and sounds of a landscape garden can provide a stimulating sensory experience that helps users to connect with a space.



2.3a Stimulating sensory experiences

## 2.4 Major Issues

### 2.4.1 Best Practices for the External Spaces

The study attempts to examine major issues and design considerations in providing a set of best practice guidelines for external spaces. The design guidelines are tools to assist designers and other professionals in realizing universal accessibility. The best practices highlight generic issues and identify major areas for improvement. Practical solutions and options with photo illustrations to achieve universal accessibility standard are documented for designers to develop their own innovative designs based on the needs of the widest spectrum of users.

The following major issues will be discussed in *Section 3*:

- Access Route
- Connectivity and Interfacing Elements
- Landscaped Spaces
- Furniture, Equipment and Fittings
- Way finding, Orientation and Signage
- Detectable Surfaces
- Colour and Luminance Contrast
- Lighting
- Safety
- Management and Maintenance



2.4.1a Accessible green spaces between building blocks

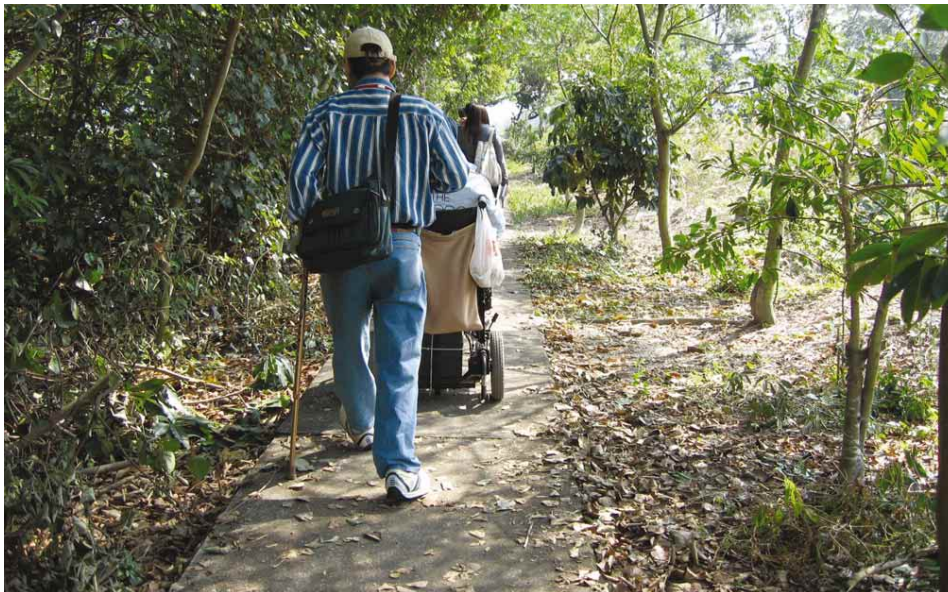
## 2.4.2 Sensory and Psychological Aspects

External spaces give out a vast array of sensory signals, both good and bad, that stimulate the senses. How users can generate a sense of “good feeling” from the designed spaces definitely require some creative thinking on the designer’s part. It also has to come from an understanding of the local culture and a sensitivity to people’s needs.

People with different capabilities react differently to the various stimuli in their surroundings. Where most people tend to rely mostly on their visual sense, the visually impaired, for example, tends to be more sensitive to sounds, smells and textures. Where appropriate, designers and planners should strive to design an environment that can provide multi-sensory experiences that cater to the widest spectrum of users.

In Hong Kong, the use of multi-sensory elements can increasingly be found in many parks and open spaces. These elements include water features; lighting features; wind chimes; audio sculptures; tactile sculptures; tactile maps and directories; various species of planting which give off different scents; sensory cues; various assistive listening devices, etc. These elements do not only enrich the space by providing a multi-level sensory experience for the users, they can also serve as effective way finding and orientation tools. There are examples of sensory gardens built in Hong Kong and reference will be included in the study report to illustrate the positive effects of multi-sensory elements.

The sensory aspects of universal accessibility will be highlighted in various sections of *Section 3*.



2.4.2a Accessible routes for enjoyment of nature



2.4.2b Design an environment that offers multi-sensory experience



### 2.4.3 Sustainability

A built environment that is user friendly, accessible and readily enjoyed by everyone would be more sustainable.

If universal accessibility concepts are considered and implemented in the early stages of design, there can be cost savings and the facility may be more marketable as it will suit a wider range of users. On the contrary, if accessibility is not considered, alteration may not be possible after the building work has been completed, as

there may be physical constraints that render alteration impractical. Abortive work and wastage may occur if substantial alteration work is required later on to adapt to people with special needs.

Finally and most importantly, the elements that make the building or facility accessible must be maintained in good working order such that people can continue to enjoy the accessible environment.



2.4.3a Provide a sustainable built environment

## 2.5 The Way Forward

Hong Kong is a city that is in constant motion. It is vital that we keep pace with the changing needs of the society and make every effort to continuously improve our built environment. Achieving universal accessibility and providing equal access for people from all sectors of the community to facilities and information is an important step forward.

Accessibility is becoming more important in a modern society. Advance technology can help people to overcome physical disabilities and facilitate the expression of intellectual ability. This is evident as talented people such as Mr. Stephen Hawking and many others make significant contributions to the society.

There are many ways to incorporate universal accessibility into the built environment. The essence is to provide accessibility by inclusion. Design professionals can play a significant role in implementing, educating and promoting the concept of universal accessibility. With the inclusive design approach, a more accessible and sustainable built environment can be attained for the maximum benefit of the community. The provision of a comfortable, accessible and safe built environment will enable everyone to make a positive contribution to the society.