

Universal Design Considerations in Adaptive Re-use of Historic Buildings

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Fig 1. A multi-sensory map installed at a convenient height adopting conventional layout plan presentation for the general public; high colour contrast for people with low vision; Braille for the lost vision and voice message for those who do not read maps is a good example of universal design for the use by all people with different abilities.



Fig 2: Permanent ramp is well integrated with the building fabric at the entrance of the Heritage Discovery Centre (Courtesy: Antiquities and Monuments Office)

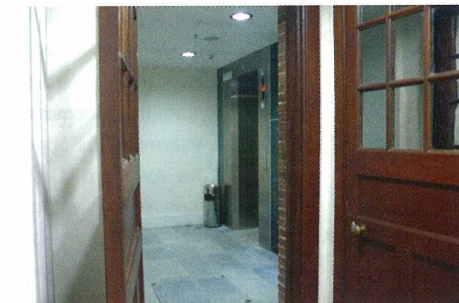


Fig.3 Lift is installed in an area of the least cultural significance in the Kam Tong Hall.



Fig. 4 Models, audio guides, videos, computer simulations, virtual realities, drawings, animation are excellent tools for interpretation of those not so accessible parts of the building, the intangible heritage, the historical and socio-cultural background of the built heritage, to ensure that the built heritage can be enjoyed by all.

Introduction

Universal Design, or Universal Accessibility, or Design for All has received much attention in the past decade in Hong Kong. It was at first regarded by many people as an ideal in design but has now been recognized as an essential element for a society that values human rights and respects the ageing community. Universal Design, promoting barrier free accessibility, freedom of choice and living full life with dignity independent of individual's age or abilities, is the way forward to the sustainability of our built environment. It has been gradually adopted in our new public housing developments, transportation and public buildings, while the Building Regulations in 1997 ensures a barrier free access environment in the private developments. These are for the new constructions. What about our historic buildings, which Hong Kong people have been awoken for their conservation after the incidents of the Star Ferry, Queens Pier and the King Yin Lane mansion? Built heritages are legacies from our ancestors. They too shall be shared amongst all people and be accessible for the enjoyment and appreciation without prejudices against age and abilities.

Universal Design

What is Universal Design? According to Ronald L. Mace¹, the founder of the Center of the Universal Design, North Caroline, USA:

"Universal Design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design."

In 1997, a group of advocates of Universal Design including architects, product designers, engineers and environmental design researchers developed and compiled "The Principles of Universal Design"². Although these principles are not commandments, they provide a good reference for achieving a design that can be accessible by the greatest extent of people. These principles conveyed two clear messages: Universal Design should be a broad-spectrum solution that

helps everyone not just people with disabilities and it is not only about barrier free access but universal accessibility to all services.

In new developments, these Universal Design principles will work with a more conscientious design. However, the conflict lies in the adaptive re-use of these historic buildings when they have to incorporate this new Universal Design paradigm, which was never on its original design agenda, in order to comply with the latest building regulations and to meet society's aspirations.

In Hong Kong, related Buildings Regulations and Code of Practice in Hong Kong on Universal Design, or more accurately, barrier free access only, include a) Disability Discrimination Ordinance; b) Buildings (Planning) Regulations; and c) Design Manual: Barrier Free Access 1997.

The Disability Discrimination Ordinance prohibits discrimination against persons with a disability in failing to provide the means of access to any premises or by refusing to provide appropriate facilities, can broadly be interpreted as the requirements in providing more than barrier free access and towards the Universal Design. Other than this, there is nothing mentioned about historic building nor are there requirements on Universal Design. It does not mean that intervention work to these historic buildings do not require to follow Regulations. On the contrary, they should follow the same constrained parameters of barrier free access as the new developments. In many incidents, this poses more than challenges to the conservationists.

In the Americans with Disabilities Act of the United States and in the Disability Discrimination Act of UK, there are special regulations on historic building alteration work. Accessible routes are to be provided when practically possible, and they accept alternative requirements or managed solution when the improvement of accessibility work will prejudice the character of the historic building, or increase the deterioration to the building fabric or fittings.

In this regard, the Hong Kong government should seriously review the relevant

Ordinance and Regulations in order to allow enough flexibility for any good intention for adaptation of our built heritage.

Adaptive Re-use of Built Heritage

Although there is yet the definition for adaptive re-use in Hong Kong, the term generally refers to the process that adapts historic buildings for new uses while not distorting or obscuring the cultural significance³ of the place, or detracts from its interpretation and appreciation.⁴

Since built heritages are finite resources, any inappropriate act will endanger their survival. There are rules in the international charters and principles governing intervention works to the historic buildings. In any adaptation⁵ work, it should involve minimal change to the significant fabric and achieved only after considering alternatives.⁶ The results of the intervention should be unobtrusive, or in other words, integrate harmoniously with the whole, but at the same time must be distinguishable from the original.⁷ When there are unavoidable changes which reduce cultural significance, they should be reversible, and be reversed when circumstances permit.⁸

These guidelines and principles may seem obvious, but to actualize them in their true sense requires thorough understanding of the meaning of conservation, the appreciation of the cultural significance of the place; as well as the availability of the necessary conservation technology and the skilled labour from the conservation construction industry.

Universal Design Considerations in Adaptive Re-use of Historic Buildings

Universal Design cares about the human rights, universal accessibilities, freedom of choice while conservation, including adaptive re-use of historic buildings, aims for sustainability of the tangible and intangible heritage from the past through the present to the future. Both philosophies should have no conflict. But, to achieve universal accessibilities while conserving the cultural significance of the historic building often requires sensitive reconciliation.

To attain the delicate balance, a strategic review of how the solution for universal accessibilities could provide a long-term and worthwhile enhancement to the built heritage is essential. In other countries, registered access consultants would undertake an access audit to the historic building with regard to the varied abilities in vision, hearing, mobility, restricted reach etc. In Hong Kong, this important task will fall onto the shoulder of the conservationists. Engaging the various stakeholders and the community at large to understand the users' requirement and the sentiment of the society towards the built heritage is an essential process in the contemporary Hong Kong, though it is by no means a simple and easy process.

The "Accessible"

The more tangible part of providing universal accessibility is the provision of the accessible routes in both the exterior and the interior, accessible reach for facilities, clear signage and accessible toilet facilities. A good access shall be an easy and dignified one which can be used by all people, including use of wheelchair, pram, walking aids and people with visual impairment.

The accessible route shall start with the arrival from transportation to the built heritage. A levelled access can be achieved by adding bridge, ramp, external lift or using the surrounding landscape areas to provide the alternative route of access. At the entrance to the historic building, ramp can be adopted to negotiate the level differences for the usual flight of steps in the western architecture or the high threshold in the Chinese building. Although temporary ramp or portable ramp is highly reversible complying the rules of conservation, it is difficult to make them aesthetically pleasing and structurally safe. A well integrated designed ramp with the existing fabric is preferred.

For floors above ground, we need lift, lifting platform or even stair lift⁹, which can either be external or internal. These new structures shall be added with least disturbance to the existing building fabric, or in area of the least cultural significance within or adjacent the historic building. The same principle shall apply to the addition of accessible toilet, signage or other facilities.

For the visually impaired, voice messages, tactile signage, tactile guide path, multi-sensory map help them find their way and warning strips provide warning signal ahead. Since historic buildings are usually with deep inside and high ceiling making interior much darker than the immediate outdoor, transitional space shall be provided for the visually impaired to adapt their vision to avoid accident.

The "Inaccessible"

Despite all the efforts in providing barrier free accessible route, because of the building configuration and structural constraints, it may not always be feasible to provide the access facilities. What shall we do to enable the built heritage to be enjoyed by all?

Besides the physical accessibility, to experience and understand a built heritage, a visitor needs background information and analysis of the historical, social and cultural context. Depending on the visitors' interest, physical abilities, and educational background, they would want to choose how in-depth they want to experience and tour around the built heritage. Therefore, providing access is important but is not the only solution. We should provide our visitors as many ways to appreciate the built heritage as possible.

Models, animation, audio guides, videos, computer simulations, virtual realities, etc to illustrate those not so accessible parts of the building, the intangible heritage, the historical and socio-cultural background etc, are excellent tools for interpretation of the built heritage through different senses of experience including visual, auditory, olfactory and tactile. These tools are not only valuable to those people with a disability but will benefit all visitors at large. If they are installed in the easily accessible location within the historic building, everyone can experience the sensory tour in the ambient of the built heritage which is a good alternative solution to access.

Remarks

Universal accessibility is a new requirement of this era. When the improvement of accessibility would not threaten or destroy the work and values of our historic building and comply with the conservation rules of reversibility, we should have no fear in adding the accessibility facilities sensitively into the historic building, which is our layer of history to reflect the current needs of universal accessibility.

Endnotes:

- 1 Ronald L. Mace (1941-1998), creator of the term "universal design"
- 2 The 7 Principles of Universal Design from The Center of Universal Design, NC include:
Equitable use, Flexibility in Use, Simple & Intuitive Use, Perception Information, Tolerance for Error, Low Physical Effort, Size and Space for Approach and Use.
See also Wai, Rosman (2001) *Universal Design*. HKIA Journal Issue 27. p.34-38. for details.
- 3 Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. (Burra Charter Article 1.2)
- 4 Burra Charter 1999, Article 21.1 and Article 22.1
- 5 Adaptation, means modifying a place to suit the existing use or a proposed use. (Definition in Burra Charter)
- 6 Burra Charter Article 21.2
- 7 The Venice Charter, 1964 Article 12; and Principles of the Conservation of Heritage Sites in China Article 21
- 8 Burra Charter 1999, Article 15.2
- 9 Although stair lift is not preferred in new development, it can be an alternative solution for historic buildings due to site constraints.

Major References:

- Americans with Disabilities Act (2007)*. <http://www.usdoj.gov/crt/ada/>
- English Heritage (1999). *Easy Access to Historic Buildings*, <http://www.english-heritage.org.uk/server/show/nav.1699>
- PREISER Wolfgang F.E. (2001), editor in chief. *Universal Design Handbook*, USA: McGraw-Hill.
- The Center of Universal Design, NC (1997). *The Principles of Universal Design, Version 2.0 4/1/97*. http://www.design.ncsu.edu/cud/about_ud/udprinciplestext.htm
- The Disability Discrimination Act* <http://www.spab.org.uk/html/advice/conservation-advice/the-disability-discrimination-act/?PHPSESSID=2c514b3df205>

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