Case Studies and Interviews



Introduction

The scene is set at Hong Kong. It is necessary to put the issues to test, to see what have been accomplished in barrier free access, to review what the concerns of users are and plan the way forward. The views and feedbacks of user groups as well as expert professionals working in the field have been solicited to examine the status of accessibility in Hong Kong. Towards this end, technical studies and surveys have been conducted on two ArchSD projects. Visits were made to a number of ArchSD and local projects to collect information on best practices and users' comments. The survey results and user feedbacks have been analysed to establish indicators for future improvement. The surveys, case studies, interviews, feedbacks and references to overseas projects form the backbone of the study. They are the basis for recommendation on design considerations and best practices in Section 5 and 6.

Case studies:

Two community facility projects have been selected for illustration and comprehensive study: Hong Kong Central Library, and Tai Po Waterfront Park. Both projects have a high usage rate by a wide spectrum of people of different ages and abilities. They are selected as case projects to review the actual performance of the facilities.

The study is mainly based on provisions of access for the disabled and barrier free access, which is the design standard and guideline used for these two projects at their planning and construction stage, as a basis to review relevant design elements. An evaluation on the effectiveness of various provisions in relation to categories of users of different age groups and/or with different abilities and needs is included. Comments and opinions from the users of the two facilities are also collected for future improvement to similar design. Findings of the survey for each of the above two projects are documented in Section 4.1 and 4.2.

Interviews:

The interviews are intended to gather practice feedback and experience from users of disability groups, as well as professionals in the rehabilitation field with architectural background. The users and staff of TWGHs Jockey Club Rehabilitation Complex, which provide services for persons of different disabilities; and the consultant Architect of Environmental Advisory Service, who has extensive experience on the built environment for persons with disabilities, were interviewed. User requirements and points to note in design planning are derived from the daily life experience and suggestions of the users as well as professional views of architects and occupational therapists. The interviews and user feedback are documented in Section 4.3.

4.1 Case A and User Feedback

4.1.1 **Project Background**

4.1.2 Key Features of Design for Access

4.1.2.1 Access to facility

4.1 Case A and User Feedback

4.1.1 Project Background

Centrally located in the hub of Causeway Bay, Hong Kong Central Library is a purpose-built library development serving the whole of Hong Kong. The following are the key considerations for access in

- (a) To enable the library to be used by the widest spectrum of people of different age groups and people with disabilities as far as possible.
- (b) To provide a pedestrian thoroughfare between Causeway Road and Bus Terminus; and to provide a link between Victoria Park and the Library main entrance by means of a footbridge.

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Causeway Bay Sports Ground

Central Library

Site Plan

4.1.1a)

4.1.2 Key Features of Design for Access 4.1.2.1 Access to facility

(a) Connection with road/street/ pathway

During the design planning stage, a pedestrian thoroughfare parallel to Moreton Terrace is incorporated to provide through access between Causeway Road and the Bus Terminus, apart from being one of the access points to the Library. The walkway is made up of series of sloping grounds without steps to enhance barrier free access. A link bridge leading from Victoria Park to the Library main entrance at 1/F deck level is also provided. Lift service is also available for access to the bridge from street level.

(b) Entrance

The main entrance is conveniently located at the centre of the Causeway Road facade, and is prominently marked by the building name sign with the landscaping area and grand staircase



4.1.2.1a) Thoroughfare



4.1.2.1b) Main Entrance



4.1.2.1c) Link bridge

4.1.2.1 Access to facility

(c) Initial access to entrance/exit

The most commonly used entrance/exit is the main entrance at Causeway Road, which is at 1/F deck level, with lift service from Causeway Road. The grand staircase and main entrance are easily identified as the initial access. The side entrance via the external lift tower or escalator can be accessed from Moreton Terrace, which also serves as the vehicular entrance. In addition, the link bridge from the Victoria Park also serves as a convenient access to the Library.

(d) Door

Glass swing doors are used for major entrances. Basically the 1/F level is all provided with glass wall panels with prominent markings on the glazing. The entrance doors are recessed under a big canopy in the middle of the wall panels with an eye-catching portal-frame surrounding the doors for easy identification. The glazed doors can facilitate persons on both sides to be aware of others on the opposite side in this busy traffic area. Only manually operated doors are available but these doors are considered quite easy to open with an acceptable pull force.

(e) External signage

Freestanding sign posts and wall-mount sign plates are provided from the street level to the deck level informing visitors of the entrances, disabled entrances, major functional facilities, and facilitating wayfinding.



4.1.2.1c) Lift entrance from Victoria Park



4.1.2.1c) Lift tower at Moreton Terrace entrance 4.



4.1.2.1e) Entrance sign



4.1.2.1e) External sign post

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4.1.2.1 Access to facility

(f) Change in level

The level difference from the main street level up to the entrance of the various facilities is served by stairways, ramps, lifts or escalators, which are all integrated into the landscaping area.

(g) Ramp/sloping ground/stair and step

Sloping grounds are used as far as practicable as passageway to facilitate access for all persons. Gentle gradients are used to enhance walking or wheelchair comfort. Ramps are provided with intermediate landings, tactile at top and bottom ends, and footlights. Stairs and steps are provided with contrasting nosing and tactile at top and bottom ends. Integration of these features with the landscaping area also increases the number of people who could share the enjoyment of the landscape beauty. These external surfaces are stable, firm, non-slippery and lie generally in a continuous plane.

(h) Handrail

Mounting heights of handrails for staircases, parapets and ramps are designed to suit people walking and in wheelchairs respectively. Brackets are recessed to form continuous handrails. Braille directional signs are installed at the top and bottom ends of external handrails for direction indication.

However, the external stainless steel handrails may retain more heat under bright sunlight.

(i) External tactile path

Comprehensive tactile paths both on G/F street level and 1/F deck level are provided to assist wayfinding, leading from various essential areas like Victoria Park, Causeway Road and Bus Terminus. Portions of the external tactile path are also accompanied by footlight flushed with the ground.



4.1.2.1g) Ramp and stairs



4.1.2.1g) Sloping ground



4.1.2.1h) Braille sign at handrail



4.1.2.1h) Handrail at parapet



4.1.2.1i) External tactile guide paths

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4.1.2.2 Information

4.1.2.2 Information

(a) Public counter

Public counters inside the Library include information service counters, book check-out counters, and counters at cloakroom. These counters are generally conveniently located at prominent locations, and are provided with high and low portions. Some are also with protruding counter tops, some with notches for holding crutches, walking sticks and alike.

(b) Directory

A ceiling hung digital display directory is provided at the main entrance. The size and colour contrast are considered adequate. Induction loop system is available at one borrow/return counter. However, no braille directory is provided.

(c) Signage and guidance

Floor numbering and facility signs are mostly wall-mounted with contrasting colours for the

signs and the wall surfaces. Direction indication signs designating various functional spaces and facilities are ceiling hung at every floor. Apart from letters, numerals and characters, pictorial symbols are incorporated to facilitate comprehension. Symbols of accessibility are also provided on the same sign. Braille signs are only provided in association with lift installation.

(d) Wayfinding

With the central atrium spanning six storeys of the Library, it gives a general impression of orientation upon entry. The atrium is punctuated by passenger lifts at one side and escalators at the other side. These prominent features contribute to a brief mental map for people to find their way.

Specific floor layout planning and design features are essential for users to follow the sequence of flow easily. Examples include information counters



4.1.2.2a) High and low cloakroom counter



4.1.2.2b) Digital directory



4.1.2.2b) Floor directory



4.1.2.2a) Counter with disabled sign & notches



4.1.2.2c) Ceiling hung signage

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4.1.2.2c) Wall mounted signage

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4.1.2.2 Information

4.1.2.3 Pathway to functional areas

located opposite to the lift zone; carpet borders and walls of different colours on different floors fronting the lift and escalator landings to enhance identification; floor directory and computer information kiosks along passageways; and staggered borrow and return counters on the way to the exit.

4.1.2.3 Pathway to functional areas

(a) Internal tactile surface

Tactile is used to alert people to different types of facilities, to hazards and changes in level at top and bottom of ramps, escalators and staircases, and as directional paths leading to major functional areas. Tactile guide paths start from the external access route at Victoria Park, Causeway Road and Bus Terminus to the Library entrances on both G/F and 1/F. Internally, tactile guide paths also lead from various entrances to information counter and lift zone.

(b) Turning space

Sufficient floor spaces are provided at ramp landings, lift landings, after door swings, and passageway dead-ends to facilitate turning of wheelchairs.

(c) Width of pathway and projections

Library is a popular communal facility with anticipated busy traffic. Users are not required to pass through any lobby, corridor and alike. Integrated passageways with the main functional spaces can enhance free movement and minimize conflict due to crowdedness. Obstruction due to any projections is also eliminated with this open plan design.

(d) Luminous contrast for floor and wall finishes and at changes in level

The use of lighting to define spaces can assist in orientation and to prevent accidents. Glazed panels are used for both the footbridge parapet and 1/F external wall to maximize the intake of



4.1.2.2d) Central atrium with lift zone & escalators



4.1.2.3a)Tactile to lift zone



4.1.2.3a) Border colour on floor



4.1.2.3a) Tactile to counter



4.1.2.3c) Typical floor passageway



4.1.2.3d) Wall mounted footlight at ramp

4.1.2.3 Pathway to functional areas 4.1.2.4 Ease of use of facilities

natural daylight, which helps to distinguish the floor and wall / vertical surfaces. At each floor level, combined with the use of different colours for floor and wall/parapet surfaces, luminous contrast is achieved to outline the shape of the space. Wall-mounted footlights are provided at ramps for night use.

(e) Surface material and texture

The selected external ground surface materials are in general firm, stable, durable, even and slip resistant. Gratings have been avoided along predominant direction of traffic. Drainage is directed to fall towards the edge channels to minimize interruption to the walkway users. The internal floor surface is mainly carpet tiles to maintain good acoustics and slip resistance. Small areas of granite tiles are used at lift and escalator landings and entrance lobby areas. Door mats are installed at entrance doors levelled with the floor.

4.1.2.4 Ease of use of facilities

(a) Height of fixture and fitting

The facilities and services are generally provided with two heights to suit people in standing position, people with short stature, children, or wheelchair users. The counters, computer kiosks, public pay phones, drinking fountains, hand dryers, urinals, and lift buttons are all fitted with high and low heights.

(b) Seating and bench

External fixed benches are easily accessible at the walkway, and are provided with side space for wheelchair companion. Internal seating can be categorized into fixed leisure seats and movable reading seats at booths or computer stations. The fixed seats are either sofa or multiple chairs in a row. All are easily accessible along the passageways. Seating at study booths or computer stations are all movable for flexibility and convenient use by wheelchair users. Space for wheelchair users has been reserved at the fixed seating inside Lecture Theatre.



4.1.2.3d) Different light fittings at typical floor



4.1.2.3d) Lighting along tactile path



4.1.2.3e) Ground surface finish

4.1.2.4a) Public telephones



4.1.2.4c) Computer kiosk for standing use



4.1.2.4a) Kiosk for sitting & wheelchair user



4.1.2.4b) Fixed seating at Lecture Theatre with

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4.1.2.4 Ease of use of facilities 4.1.2.5 Lift and ancillary facilities

(c) Kneespace for wheelchair

Priority reading tables with adjustable height are provided to accommodate the armrest of wheelchair. Other facilities like counter tops, computer information kiosks, public pay phones, drinking fountains and hand dryers for wheelchair users are designed with kneespace provision.

4.1.2.5 Lift and ancillary facilities (a) Lift

Provision of access for the disabled has been included in the lift installation design. Features include wheelchair signs, high and low button panels, braille sign at call buttons, contrasting colour braille floor numbering signs at landing door jambs, audio announcement and visual plasma display information inside the lifts for the visual and hearing impaired.

(b) Parking and access to facility

Parking is next to the side entrance at Moreton

Terrace. Disabled carparks are designated close to the entrance to Exhibition Hall at G/F and lift tower leading to 1/F main Library entrance.

(c) Rest room, sanitary and baby care facility

Rest rooms, sanitary facilities and drinking fountains are available at every floor. Baby care facility is provided inside the disabled toilets. Signage for baby care is only provided at the Children and Toy Library floor. There are a number of good features that cater for the disabled, the elderly and people with babies. Examples include tilted mirror in disabled toilets; disabled water closet with concealed cistern located away from the rear wall to facilitate wheelchair transfer; assisted handrail for one urinal in each male toilet; one recessed hand dryer at high level and a lower protruding one for wheelchair users.



4.1.2.4c) Adjustable height reading table designated for wheelchair users



4.1.2.4c) Drinking fountain for disabled person



4.1.2.4c) Projecting hand dryer



4.1.2.5a) Wheelchair user using lift



4.1.2.5c) Low urinal with handrail



4.1.2.5c) Baby care facility



4.1.2.5b) Disabled carparks



4.1.2.5c) Breast feeding cum first-aid room

4.1.2.6 User management

4.1.2.6 User management

(a) Client's support

Integrated design of access for all people into the general design requires understanding and support from the client for pragmatic implementation. In the design of the Library, the client and the architect worked well to integrate many accessible elements with functional requirements.

(b) Furniture and equipment planning

Furniture and equipment of the Library was mainly procured by the client, with professional advice from the architect. The loose and movable furniture and equipment are fit for their intended purpose and accessible to the user groups. For example, high and low bookshelves are provided for adults and children respectively; reading tables with adjustable heights to accommodate armrest of wheelchairs are designated for use by disabled persons. They contribute towards the provision of a comfortable and accessible environment for the users.

(c) Building management

To achieve sustainable physical and sensory accessibility to the facilities, building management plays an important role to control the daily operation of the facilities. Accessibility requires good management to all areas including the street, the open spaces, and in areas within and around the Library building. The building management of the Library is of a high standard to upkeep the services and built environment of the Library.

(d) Maintenance of facility

Frequent and proper maintenance is essential to keep the services and facilities in good working order and make the original design sustainable. Accessibility cannot be maintained if the floor surfaces warp; or the materials degrade due to wear and tear; or if the braille signs are flattened; or if the signage is defaced. Since its operation in May 2001, the facilities of the Library have been maintained in good condition for use by the public.



4.1.2.5b) High bookshelves for adults





4.1.2.5b) Low reading tables for children



只供視障人仕使用 For vision-impaired only



4.1.2.5d) Computer facilities designated for visually impaired persons

4.1.2.6 User management 4.1.3 Survey of Library

(e) Impact of alteration and addition works

When the building is in operation, user feedback is valuable in planning for improvement of the built environment. Alteration and addition works carried out in the Library has generally taken into consideration of the existing barrier free elements and details. Some works have been carried out to enhance barrier free design, for example, enlarging the flat landing area at ground level of the disabled lift, and the addition of a breast-feeding room.

4.1.3 Survey of Library

The survey aims to collect users feedback and suggestions for future improvement. The survey questionnaires cover areas on accessible route, disabled carpark, signage, tactile guide paths,

ramps and slopes, doorways, information counters and directory, hearing aid system, lift services, toilets, baby care facilities, drinking fountains, furniture and finishes.

The survey questionnaire of Hong Kong Central Library is included at Appendix A. The survey was carried out by face-to-face interview and by dispatch and collection. A total of 333 nos. of questionnaires have been completed, which include seven physically handicapped persons, two persons with baby stroller and one hearing impaired person.

	 In general, there is not much difference in the feedback to each question between different age groups and users. Majority of the users agreed that the facilities are accessible. Suggestions for future improvements are documented in Section 4.1.3.2. A summary of the answers to each question is listed below. The answer that most users agree to has been highlighted. 							Male : Female : Jnder 18 : 18-34 : 35-49 : 50-64 : Above 65 :	48.3% 51.7% 14.4% 46.9% 17.1% 6.9% 14.7%
Question	Totally Agree Agree Average Disagree Totally Disagree No answer				% of agre	% of agree and totally agree			
 Access to facilities The route to the entrance of this Library is easily accessib 	ole _{33.0%}	52.0%	11.4%	3.0%	0.3%)	0.3%		85.0%
2. Pathway2.1 The tactile guide paths can lead you to the functional facil	10.2% lities	48.1%	27.9%	7.5%	0.6%)	5.7%		58.3%
2.2 The ramps and sloping grounds can be comfortably used for access to different levels without barriers.2.3 The colour contrast for wall and floor finishes at corridors, passageways, stairways, and lobbies are adequate.	12.0% 14.1%	49.9% 57.4%	27.6% 24.9%	5.4% 1.5%	0.3% 0.9%)	4.8% 1.2%		61.9% 71.5%
3. Parking3.1 Parking for drivers in wheelchairs is conveniently located near the Library entrance.	9.9%	41.2%	29.4%	6.6%	0.6%)	12.3%		51.1%
 4. Entrance and exits 4.1 The entrance doors to the Library are: (a) with adequate width; (b) easy to operate. 	19.2% 17.4%	55.0% 51.7%	19.2% 18.0%	5.1% 11.1%	0.9% 1.5%)	0.6% 0.3%		74.2% 69.1%
 5. Lifts 5.1 The lifts: (a) are easy to access; (b) are easy to operate and use. 	15.0% 19.5%	51.4% 60.4%	22.2% 14.4%	9.3% 4.8%	2.1% 0.9%)	0% 0%		66.4% 79.9%

4

Question Totally Agree	Totally Agree	Agree	Average	Disagree	Totally Disagree	No answer	% of agree and totally agree
6. Wayfinding, signage and guidance							
6.1 The external signage is:	10.2%	50.2%	27 20/	11 10/	0.6%	0.6%	60 4%
(a) adequate at prominent locations;	10.2 %	53.2%	21.5%	9.6%	0.0%	0.0%	63.7%
(b) with appropriate form size and colour,	10.8%	52.9%	26.4%	8.1%	0.9%	1.2%	63.1%
(d) usoful in assisting you in way finding	14.1%	49.0%	27.0%	8.7%	0.9%	0.3%	63.0%
(u) useful in assisting you in way information.	14.170	-0.070	21.070	0.770	0.070	0.070	00.070
(a) conveniently found:	13.2%	58.9%	21.0%	5.7%	0.9%	0.3%	72 1%
(b) useful in assisting you in way finding	24.0%	48.1%	19.8%	4.8%	0.6%	2.7%	72.1%
6.3 The hearing aid induction loop system is useful in					01070	,0	,.
enhancing the transmission of information	3.3%	21.0%	37.2%	6.6%	1.5%	30.3%	24.3%
6.4 The general signage at each floor is:							
(a) adequate at prominent location:	11.1%	52.0%	29.1%	5.1%	2.4%	0.3%	63.1%
(b) With appropriate font size and colour:	10.2%	55.3%	26.4%	5.4%	2.1%	0.6%	65.5%
(c) Informative and easy to comprehend:	9.0%	59.8%	23.1%	4.5%	3.0%	0.6%	68.8%
(d) Useful in assisting you in way finding.	11.4%	55.6%	25.5%	4.2%	2.4%	0.9%	67.0%
7. Sanitary and health care facilities							
7.1 The toilet facilities are:							
(a) conveniently located;	19.2%	52.3%	22.5%	4.2%	1.5%	0.3%	71.5%
(b) with sufficient space for approach.	20.7%	55.9%	18.3%	3.6%	1.2%	0.3%	76.6%
7.2 The baby care facilities are:							
(a) conveniently located;	3.9%	21.9%	40.3%	9.3%	2.1%	22.5%	25.8%
(b) with sufficient space for approach.	4.2%	27.3%	38.5%	5.7%	2.1%	22.2%	31.5%
7.3 The drinking fountains are:							
(a) conveniently located;	9.0%	41.2%	30.6%	11.1%	2.7%	5.4%	50.2%
(b) with sufficient space for approach.	5.4%	28.5%	34.9%	8.1%	1.8%	21.3%	33.9%
(c) at a suitable height for use.	7.5%	43.6%	33.6%	8.4%	1.5%	5.4%	51.1%
8. Furniture, fixtures and fittings							
8.1 The information counters are arranged with:	- / /				4		
(a) an appropriate size and height;	21.0%	53.5%	17.7%	1.5%	1.2%	5.1%	74.5%
(b) sufficient space for approach.	18.9%	56.2%	19.2%	2.4%	0.9%	2.4%	75.1%
8.2 The bookshelves are with a height suitable for its purpose.	14.1%	64.9%	15.9%	3.9%	0.9%	0.3%	79.0%
8.3 The reading booths are with a height suitable for	16.5%	67.3%	13.2%	2.4%	0.3%	0.3%	83.8%
Its purpose.	16.5%	56.8%	18.0%	3.3%	0.3%	5.1%	73 3%
its purpose.	10.070	00.070	10.070	0.070	0.070	0.170	10.070

4.1.3.1 Findings of the survey 4.1.3.2 Comments from users

4.1.3.1 Findings of the survey

Answers with more than 10% feedback of "disagree and totally disagree" from the users are highlighted below.

Entrance doors:

 About 13% of users found the manual entrance doors not easy to operate.

Lift services:

• About 11% users indicated that lift access and zoning were not convenient.

External signage:

 About 12% of users indicated that there was inadequate signage at prominent locations.

Hearing aid induction loop system:

- About 30% of the users responded that they were not aware of the existence of such facility and hence could not provide an answer to the question.
- This suggests that the public at large does not know about the system and the utilisation rate of the facility is low. It would be useful to make the public more aware of the device.

Baby care facilities:

 About 23% users did not know the existence of such facility and hence could not provide an answer,and 11% indicated the facilities were not conveniently located.

Drinking fountains:

• About 14% users replied the location of drinking fountains were not conveniently located.

4.1.3.2 Comments from users

The significant comments received from the users are summarised.

Circulation:

- The manually operated swing doors at main entrance on 1/F deck should preferably be changed to auto-doors in view of the busy traffic every day.
- Number of lifts for passengers and disabled should be increased to minimize long queues and long waiting time. Increasing the number of cargo lifts could also improve the service.
- Circulation by escalators required longer travelling time and thus was not popularly used.
- Addition of indicator at lift landings to show the location of lifts would be useful.

Signage and information:

- Signage at ceiling level was less noticeable. Increasing the number and enlarging the size of the signage and placing them at lower prominent locations were preferred.
- Stronger colour contrast of the signage would be more eye-catching and could provide clearer information.
- More directional signage to frequently visited facilities like toilets, photocopying machines, cloak room, computer resource centre, baby care facilities, would help in way finding. Some provisions, like baby care facilities and drinking fountains, might be under utilized as people do not know of their existence due to inadequate information.
- Information on the signage should be clear and the direction indication should be easy to understand.
- More maps showing fire escape routes would be useful.
- Clear floor numbers visible from opened lift cars should be added to lift landing on each floor.
- More information counters near the lift landing should be provided.
- Bigger time display would be preferable.

- 4.1.3.2 Comments of users
- 4.1.4 Lessons learned from the project
- 4.1.4.1 Indicators for improvement

Sanitary facilities:

- Provision of separate baby changing facilities accessible by either sex of parents in conspicuous locations with more prominent signage could enhance better utilization of the facilities.
- More toilets would be desirable.
- The flushing handle required a strong pressing force to operate. This might contribute to the frequent unhygienic conditions of the toilets.
- Floor surface material for areas in front of toilets should be changed to a type that produced less noise when people walked on it.
- Addition of staff changing facilities would be desirable.

General facilities provision:

- More designated facilities should be provided for the disabled.
- Student study rooms should be provided.
- A zone for cell phone users should be provided to control the noise.
- More covered areas and benches could be provided at the external areas.

Furniture and equipment:

- More seating and reading booths would be desirable.
- Reading desks and chairs should have adequate width, appropriate height, and adequate legroom for user's comfort.
- Computer stations should have adequate width and appropriate height for comfortable seating and operating the mouse.
- Each computer station could be partitioned to minimize disturbance amongst different users.
- Footrest should be adjustable to suit different people.
- More locker facilities would be desirable.
- The uppermost rows of bookshelves are too high to be reached, especially for the persons with disabilities, the elderly and children.

4.1.4 Lessons learned from the project 4.1.4.1 Indicators for improvement

Based on the survey results and technical study, main areas for improvement to the library are identified as follows:-

- Automatic main entrance doors should be provided as the large doors are less easy to open while carrying heavy books and other personal belongings. Auto door sensors by weight detection are better to detect the wheelchair user and the sensor should allow more time for slow movements of handicapped people and the elderly.
- Lifts serving different zones should be grouped together or in close proximity for easy access.
- Users, including young adults and students prefer lifts than escalators, as the service is direct and fast. More lifts should be considered as they serve everybody and not just the elderly and disabled.
- External signage and wording should be of a bigger size and stronger colour and luminance contrast, especially if they are fixed at high level. Signage and location map at lower level is useful and facilitates way finding.
- Some users did not know that the baby care facilities are installed inside some toilets and some parents used the sofas for baby changing. Provision of a unisex baby changing facilities should be considered and more conspicuous signage should be provided.
- More space for approaching facilities such as drinking fountain should be considered. Adequate access should be provided for users including people in wheelchairs to use the drinking fountain and for people to pass through if the facility is located in circulation corridor.
- The general public and staff are not familiar with assistive devices. The facility would be better utilised if more people know about its function and availability in the building. The provision of an information leaflet listing the facilities for the disabled and appropriate signage would help in promoting the use of these facilities.

4.1.4.1 Indicators for improvement

4.1.4.2 Other important points

4.1.5 Conclusion

• Ramp access to the stage in the lecture theatre should be provided. Same approach to the stage for everybody and access from the front of the stage is preferred.

4.1.4.2 Other important points

With reference to the key issues of planning approach as discussed in Section 3, the main points to consider in accessible design are as follows:-

- Connections to major transportation nodes adjacent to the facility are a priority consideration.
- Provision of a continuous barrier free routing, adequate signage and lifts from the street level to facilities in the library enables users of all abilities to visit the Library freely.
- Common access for a wide range of users should be provided.
- Fittings with size variation, such as adult and child size toilets and basins, should be provided to suit the elderly, adult or child.
- Inclusive design features, such as low level computer kiosk with movable seat and adjustable computer tables, can be made attractive and enjoyed by all users including those in wheelchair.
- Accessible design considerations should cover functional requirements, information services, furniture and equipment. For example, the provision of a notch on counter top for holding the walking stick is user friendly.

4.1.5 Conclusion

With the design stage started in the early 90s, the requirements of Design Manual on Barrier Free Access 1997 can only be incorporated during the construction stage of the project, with compromises on certain aspects of site and budgetary constraints. The accessibility of the Library has achieved a standard beyond the statutory requirement for the disabled at its time of design and construction, although there are items that should be improved as viewed today. Accessibility not only increases the utilisation of the Library, it has also attracted people to come and enjoy the accessible environment such as taking a leisure stroll, taking a breathe of fresh air, or just taking a rest at the benches, giving added value to the Library development.

This study on the Hong Kong Central Library has reinforced the concept of universal accessibility, the application and implementation of which can bring about a more sustainable built environment. Apart from facilitating access and enjoyment for people of all abilities, it can also enrich people's lives through participation in community activities and using the facilities.

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4.2 Case B and User Feedback

- 4.2.1 **Project Background**
- 4.2.2 Key Features of Design for Access
- 4.2.2.1 Access to the park and facilities

Case B and User Feedback 4.2

4.2.1 Project Background

Situated on a site of about 22 hectares, Tai Po Waterfront Park is one of the biggest parks in Hong Kong. Its magnitude suggests that this park not only serves the local population but also attracts visitors from other districts in Hong Kong. Its users are wide ranged from children to the elderly, as well as families. Other than landscape features, there are a few built structures such as the Insect Centre, the Outlook Tower and some blocks of ancillary facilities in the Park. The key considerations for access in the design are as follows:

- (a) To enable the park and a range of different facilities to be used by a wide spectrum of people of different age groups and physical abilities as far as possible.
- (b) To provide a network of pathways connecting the open space with all built structures and facilitate visitors to access the major facilities.

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4.2.2 Key Features of Design for Access 4.2.2.1 Access to the park and facilities

(a) Connection from road/street/pathway

The Park has in total seven access points to facilitate visitors to enter and exit the park at their convenience. The main part of the park is near Dai Fat Street while the waterfront portion is mainly for cycling activity. The study will concentrate on the main park near Dai Fat Street.

For most first-time users and visitors by coaches, they will use the main entrance located at Dai Fat Street. Private vehicle parking facility is available by private vendor near the park. For people visiting the Park by bus, they need to take a fifteen-minute walk, then cross a street before reaching the main entrance of the park.

(b) Initial access to entrance/exit

All the entrances have incorporated ramps to facilitate users with different abilities to access the Park.

4.2.2.1a) Overview of the park





Location map of Tai Po Waterfront Park







4.2.2.1 Access to the park and facilities 4.2.2.2. Information

(c) Ramp/sloping ground/stair and step

All pathways are constructed as sloping ground and ramps are extensively used in the whole park. The ramps are gentle, with good colour variation and paved with non-slippery floor material

(d) Handrail

Handrails are provided to ramps and stairways in open space and the built structures, such as the Outlook Tower and the Insect Centre. Some handrails are designed with two heights for adult and child use. For example, two rows of railings are provided to the ramp at entrance of Information Centre

4.2.2.2. Information

(a) Site planning

The park has a hierarchical road system which assists the visitor to orientate in a large open space. Two avenues from the park entrance form the primary paths. Secondary walkways branch out from them and connect the rest of the park. The paths are constructed as ramps or sloping ground to facilitate access.

- (b) Navigational guide/way-finding cues Along the main path, visitors can find some architectural features and landmarks which serve as navigational guide and provide direction to the visitors.
- (c) Directory

A directory is provided next to the food kiosk, located in the middle of the park. The facilities in the park are indicated in the directory.

(d) Signage

Information on sign post is clear and is located throughout the park. Letters, numerals, characters, and pictorial symbols are incorporated to facilitate communication.



4.2.2.1c) Sloping ground and ramps as pathways



4.2.2.1d) Handrails are provided to ramps



4.2.2.1d) Handrails are provided to ramps



Primary Path Secondary Path



4.2.2.2b) Architectural feature helps people to orientate

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4.2.2.2c) Directory next to food kiosk



4.2.2.2d) Sign posts are easily identified by the bright colour

4.2.2.3 Pathway to functional areas

4.2.2.4 Ease of use of facilities

4.2.2.3 Pathway to functional areas

(a) Width of pathway

The pathways are wide and people can walk at their own pace and travel at leisure. Families with baby strollers and wheelchair users can pass each other without congestion.

(b) Pathways to interest points

The pathways leading to activity area such as playground are of sufficient width. Some of the pathways are tree lined to provide shade.

Within each activity area, ramp access is provided to connect different levels.

(c) Floor Finishes

A variety of paving materials has been used to identify different activity areas and to fulfil functional requirements. They are generally firm, even and slip resistant. Tree pits along the pathways are paved with tiles to create a pattern on the ground. The colour contrast is used to alert people from stepping close and stumbling into the trees accidentally.

4.2.2.4 Ease of use of facilities

(a) Seating and bench

Seating and benches are arranged along the walkway at adequate intervals. They are provided with space at their sides for wheelchair users to sit with their companion.

(b) Height of fixture

In visitors centre and Insect House, sufficient space is provided for wheelchair user to access and use the computer information terminals. The screens are installed at two heights so that people sitting and standing can both see the screen.



4.2.2.3a) A wide pathways enables people to travel around at leisure



4.2.2.3b) Pathway and ramp leading to playground

4.2.2.3b) Ramp leading to lookout tower



4.2.2.4a) Seating with space at sides is good for wheelchair companion



4.2.2.4b) Computer terminals in function area

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4.2.2.5 **Provision of ancillary facility**

4.2.2.6 Special consideration in open space

4.2.3 Survey of the park

4.2.2.5 Provision of ancillary facility

(a) Disabled toilet and baby care facility

There are two disabled toilets in the park. The barrier free requirements have been considered and included.

Baby care facility is provided inside one of the female toilets.

(b) Parking and access to facility

The Park has no provision of car park for the public. A boarding and alighting area for coaches is located next to the entrance at Dai Fat Street. Visitors can use the private car park nearby.

4.2.2.6 Special consideration in open space

(a) Planting on inclined plane

Some landscaped areas are on a sloping ground instead of a flat plain. The wheelchair users can easily approach the raised planters. People of different stature can appreciate the planting without bending and it can be viewed from a far distance.

(b) Water feature

Water features are used in the park. Some water areas are sunken into ground. Generally there is a safe margin of circulation area near the major water areas.

4.2.3 Survey of the park

The objective of the park survey is to collect user feedback and suggestions for future improvement. The survey questionnaires cover areas on accessible route, signage, ramps, stairs, handrails, plantings, toilets, baby care facilities, drinking fountains, water areas, play areas, furniture and finishes.

The survey questionnaire of Tai Po Waterfront Park is included at Appendix A. The survey was carried out both by face-to-face interview and by dispatch and collection. A total of 123 nos. of questionnaires have been completed.



4.2.2.5a) Disabled toilet with ramp to access



4.2.2.6 a) Planting display on inclined plane



4.2.2.6 b) Water feature

4.2.3.1 Findings of the survey

Generally, there is not much variance in the feedback to each question between different age groups. In summary, majority of users indicated positive	A summary of the answers to each question is listed below. The answer that most users agree to has been highlighted.	Sex:	Male : Female :	52.8% 47.2%	
eedback to the various facilities provided. Suggestions for future improvement were received and are documented in Section 4.2.3.2 below.		Age Group:	Under 18 : 18-34 : 35-49 : 50-64 : Above 65 :	27.6% 22.0% 30.1% 12.2% 8.1%	

A Summary of Answers to Survey Questionnaires

Question	Totally Agree	Agree	Average	Disagree	Totally Disagree	No answer	% of agree and totally agree
 Access to facilities 1.1 The route to the entrance of this Park is easily accessible. 	27.0%	55.0%	12.0%	2.0%	0.8%	3.2%	82.0%
 2. Pathways 2.1 The ramps and sloping grounds can be comfortably used for access between different levels without barriers. 2.2 The stairs for circulation: 	30.1%	48.0%	17.9%	1.6%	0.8%	1.6%	78.1%
(a) are with easily visible nosing;(b) are with adequate landings.2.3 Handrails provided at stairs, ramps and sloping grounds are:	22.0% 16.3%	54.5% 56.1%	13.8% 17.1%	5.7% 4.9%	0.8% 1.6%	3.2% 4.0%	76.5% 72.4%
(a) smooth with suitable materials;(b) at appropriate height.2.4 The ground surface materials of circulation routes are	8.9% 6.6% 13.1%	46.0% 49.2% 67.2%	29.8% 29.5% 15.6%	4.8% 4.9% 1.6%	0.0% 0.0% 0.0%	10.5% 9.8% 2.5%	54.9% 55.8% 80.3%
non-slippery, can prevent tripping over, and not too bump 2.5 The colour contrast for vertical surface and floor finishes at ramps, slping grounds, passageways and stairways are adequate.	y. 8.2%	43.9%	30.0%	5.7%	4.0%	8.2%	52.1%
 3. External areas and landscaping 3.1 The play areas are: (a) easily accessible without barriers; (b) with safety and non-slippery ground surface material; (c) with sufficient buffer zone beyond the play equipment for safe access and use by children 	13.0% 20.3% 10.0% 3.3%	43.0% 41.5% 34.2% 28.4%	17.0% 12.2% 21.7% 29.3%	8.1% 0.8% 6.7% 17.9%	1.9% 1.6% 1.6% 8.9%	17.0% 23.6% 25.8% 12.2%	56.0% 61.8% 44.2% 31.7%
3.2 The water areas are suitably designed to prevent people from accidentally falling into the water.	0.070	2011/0	20.075	11.070	0.070	121270	0

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4.2.3.1 Findings of the survey

Question Totally Agree	Totally Agree	Agree	Average	Disagree	Totally Disagree	No answer	% of agree and totally agree
 4. Way finding, signage and guidance 4.1 The general signage are: (a) adequately provided at prominent locations; (b) with appropriate font size and colour; (c) informative and easy to comprehend; (d) useful in assisting you in way finding. 	35.5% 12.3% 17.0% 14.0%	29.8% 44.3% 41.0% 56.0%	19.4% 29.5% 27.0% 22.0%	8.9% 12.3% 11.0% 2.0%	0.8% 0.8% 2.0% 3.0%	5.6% 0.8% 2.0% 3.0%	65.3% 56.6% 58.0% 70.0%
5. Sanitary and health care facilities 5.1 The toilet facilities are:							
(a) conveniently located;	12.2%	44.7%	22.8%	14.6%	1.6%	4.1%	56.9%
(b) with sufficient space for approach.	22.0%	45.5%	14.6%	3.3%	2.4%	12.2%	67.5%
5.2 The baby care facilities are:							
(a) conveniently located;	3.3%	10.6%	20.5%	4.1%	4.1%	57.4%	13.9%
(b) with sufficient space for approach.	4.1%	15.4%	19.5%	7.3%	5.7%	48.0%	19.5%
5.3 The drinking fountains are:	0.004	7.00/	40 704	0.404	40.000	50.404	40.004
(a) conveniently located;	3.3%	7.3%	18.7%	8.1%	12.2%	50.4%	10.6%
(b) with sufficient space for approach;	1.6%	7.4%	18.0%	14.8%	6.6%	51.6%	9.0%
(c) at a suitable height for use.	8.0%	10.4%	15.2%	4.8%	5.6%	56.0%	18.4%
6. Furniture, fixture and fittings							
6.1 The plantings at sides of walkways and circulation routes	19.5%	54.5%	20.3%	1.6%	1.6%	2.5%	74.0%
will not pose obstruction to the walkway users.							
6.2 The seating benches are:							
(a) adequately provided for rest;	21.1%	44.7%	18.7%	10.6%	4.1%	0.8%	65.8%
(b) easily accessible without barriers;	17.9%	53.4%	15.6%	4.1%	2.4%	6.6%	71.3%
(c) provided with side space to allow a wheelchair user	15.5%	46.3%	24.4%	4.1%	0.8%	8.9%	61.8%
companion to sit right next to others.							

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4.2.3.1 Findings of the survey

4.2.3.2 Comments of users

Answers with more than 10% feedback of "disagree and totally disagree" from the users are highlighted below.

Play areas:

• Approximately 10% users replied that the play areas were not easy to access due to barriers.

Water areas:

• Approximately 27% users replied that there was inadequate prevention on accidental falling into water.

Signage:

• Approximately 13% of users replied the font size and colour were inappropriate; and they were not very informative.

Toilet facilities:

• Approximately 16% of users replied the location of toilets was not conveniently located.

Baby care facilities:

• Approximately 57% public did not know the existence of such facility and hence could not provide an answer. 13% public replied the facilities were not provided with sufficient space.

Drinking fountains:

- Approximately 50% users did not know the existence of such facility and hence could not provide an answer.
- Approximately 20% users replied the location of drinking fountains was not conveniently located and the space for approach was insufficient.

Seating benches:

 Approximately 15% public replied that there were not enough provisions of seating benches for rest.

4.2.3.2 Comments of users

The significant comments received from users are summarised as below:

Circulation:

• Nosing of steps should be in contrasting colour.

Signage and information:

- Stronger colour contrast of the signage would be more eye-catching and could provide clearer information.
- More directional signage to frequently visited facilities like toilets, drinking fountain and baby care facilities would help in way finding.
- Information on the signage should be clear and the direction indication should be easy to understand.
- More maps showing layout and routing of the Park would be useful.
- More information counters should be provided.

Sanitary facilities:

- Some users might not recognize that the baby care facilities were available inside the female toilet. More baby changing facilities should be provided.
- More toilets at closer distance between each other would be desirable.

General facilities provision:

- More designated facilities should be provided for the disabled.
- More covered areas and benches could be provided at the external areas.
- Car parking should be provided.
- Public transportation should be improved.
- Insect pesticides should be provided.
- More drinking fountains should be provided.
- More ponds would be desirable.
- More playgrounds are preferred.
- More benches and shelters from rain should be provided along the promenade.
- More railing along the ponds should be provided.
- Floor material with higher slip resistant would improve safety after rainy weather.
- Handrail should be made of low heat conductive ⁴³ materials.

- 4.2.4 Lessons learned from the project
- 4.2.4.1 Indicators for improvement

4.2.4.1 Indicators for improvement

Based on the survey results and technical study, main areas for improvement to the park are identified as follows:-

- Parking facilities and passenger loading area at the park should be considered. Better accessible linkage with the street and transportation nodes would promote more visitations to the park.
- Provision of intermediate level landings to long walkways and ramps are very useful for taking a rest, or for appreciating the planting around the area or as vista points.
- More seating bench under shelter along long walkways should be provided. Seating bench on sloping grounds should be accessible by wheelchair users and barrier free.
- More provision of handrails along long ramps and wide staircase is desirable for the elderly and people with walking difficulties. The material of the handrail should not retain too much heat otherwise they cannot be used under the hot sun.
- More provision of directory and signage are required, especially at major junctions. Main directory map of the park or signage showing the facilities including accessible routing and facilities for the disabled would be very useful. They should be located at the main entrance of the park and at major interest points to guide users.
- More provision of accessible drinking fountains should be provided near the toilet block and at major interest points. Information and signage regarding location of drinking fountains should be provided.
- Safety aspects of water areas should be considered. The use of colour contrast material or nosing on water edge can serve as a warning.
 - ur contrast material or

- More information on availability of facilities is required. For example, some users did not know that baby care facilities are installed inside the female toilet and many parents use the seating bench for baby changing. Provision of a separate baby changing facilities accessible by either sex of parents with conspicuous signage would promote usage.
- Facilities such as public telephones should be considered for emergency use. Information regarding their availability should be clearly indicated.
- Floor mount fittings such as light fitting should be flushed with the ground surface. Exhibition display on raised platform should be made accessible to all users including the wheelchair users.
- Fixed furniture such as stools in front of computer terminals may obstruct some users. At least one of the fixed stools should be movable to allow direct approach for all users including the wheelchair users. Equipment at high and low heights should be provided for adult and children.

4.2.4.2 Other important points 4.2.5 Conclusion

4.2.4.2 Other important points

With reference to the key issues of planning approach as discussed in Section 3, the main points to consider in accessible design are as follows:-

- Provision of a network of continuous accessible walkways and ramps connecting the various facilities in the park is good for the general public, people with baby strollers, people with disabilities and the elderly to visit the park.
- Easy connection from public transportation and provision of way finding clues in the streets would enhance access and approach to the park.
- Interactive map display which incorporate visual and vocal features as well as braille text should be provided near the main entrance.
- Architectural features, landmarks with directional signage are useful for orientation in a large open space.
- A range of passive and active activities should be provided to suit individual physical ability.
- The use of colours, non slip materials and raised inclined planters in the park are desirable.
- Multi-sensory elements such as the sound of water and tactile surfaces for play and exercise should be considered.

4.2.5 Conclusion

The Park was completed in 1997, the same year when the Design Manual on Barrier Free Access (DMBFA) 1997 came into force. The facilities in the Park incorporated a lot of the barrier free requirements applicable to building. However, there are not much design guidelines for the disabled specifically for external works or landscaping works. As viewed from today's standard, there is room for improvement to respond to higher expectation.

The study on the Tai Po Waterfront Park is a good opportunity for examining accessibility issues relating to the open space project. The study has explored how the concept of universal accessibility and its application could bring about a more enjoyable open space which could be appreciated by users of different abilities.

- 4.3 Interviews
- 4.3.1 Interviews with user groups and professionals
- 4.3.1.1 TWGHs Jockey Club Rehabilitation Complex (JCRC)

Accessibility issues and problems may be different for people with different abilities. For example, the needs of the physically handicapped may be different to that of the visually impaired, the hearing impaired, or the elderly in certain aspects due to different range of reach and strength. Considerations and special attention is necessary to address access issues in planning and detailing to improve independent access. There are expert professionals working in the field to promote accessible environments and their experiences are very valuable. By including and considering the requirements of the widest spectrum of users, solutions could be worked out to facilitate universal accessibility.

Interviews have been conducted with both user groups and professionals pertaining to the study on this aspect. The significant comments of user groups and professional views are summarised in Section 4.3.2 and 4.3.3 respectively.

- 4.3.1 Interviews with user groups and professionals
- 4.3.1.1 TWGHs Jockey Club Rehabilitation Complex (JCRC)

JCRC is a rehabilitation complex consisting of five building blocks serving 1800 people of various disabled groups. Facilities include an integrated vocational rehabilitation centre, hostels for the severely and moderately mentally handicapped persons, care and attention homes for the physically and severely disabled as well as the aged blind, and day activity centres for the severely mentally handicapped. Ancillary facilities include central administration offices, a paramedical centre, a hydrotherapy pool, a central kitchen, a central laundry and a multi-purpose hall.

Link bridges and covered walkways are provided for operational convenience and weather protection of the users which in turn encourage interaction among different types of occupants. Within the complex, a courtyard, a garden deck and roof top areas are



Interview with user groups

- 4.3.1.1 TWGHs Jockey Club
 - Rehabilitation Complex (JCRC)
- 4.3.1.2 Environmental Advisory Service (EAS)
- 4.3.2 User group feedback
- 4.3.2.1 User feedback and suggestions of the physically handicapped

provided as leisure and sitting out areas for all the users. JCRC is a place where people live, work and

Interviews with the users and staff of JCRC were conducted to collect their feedback on the facilities provided in the complex and the built environment. The user groups include the physically handicapped who are either wheelchair users or persons on crutches, and the visually impaired persons.

Key staff of the service centres and the Assistant Superintendent, who is a Senior Occupational Therapist by profession, shared their experience and made suggestions. The occupational therapists' perspective is valuable as they are concerned with human anatomy and physiology, and what improvements can be made to the physical environment to improve quality of life.

4.3.1.2 Environmental Advisory Service (EAS)

Architects are responsible for the design of the physical environment where people live and work. The extent that the built environment can enhance the quality of life depends on the amount of thought that is given to the range of abilities of the people using the building or facility.

EAS is a community architectural consultancy service aiming to improve the built environment to enable people with disabilities to integrate on equal terms into the society. EAS also operates in conjunction with the Rehabaid Centre who aims to improve the quality of life of people with disabilities.

An interview was held with Mr. Joseph Kwan, MH, the Consultant Architect of EAS, who is an architect with extensive experience on various aspects of designing for disability and implementing barrier free accessible environments, to share his experience and views on universal design. The interview also included discussions with staff and occupational therapists of the Rehabaid Centre.

- 4.3.2 User group feedback
- 4.3.2.1 User feedback and suggestions of the physically handicapped

Sleeping accommodation and washroom/shower

- Basins should be provided with two heights for people with crutches and for wheelchair users and there should be a flat surface for placing cleaning
- Fittings on the floor surface must be made leveled to avoid tripping over.
- Space for storage of wheelchairs or walking aids beside or at the end space of beds should be

External areas:

- Detectable warnings should be provided before changes in level, especially the slight ones which are less noticeable, to prevent accidents.
- Intermediate landings for long ramps with sufficient turning and passing space are useful especially
- Channel cover holes should be with small size to avoid trapping of crutches and wheels.
- Visual, sensual or audio warning is essential at vehicular crossroad junctions for pedestrians.
- Ramps should be provided to connect facilities at different levels in the open space.
- Dropped kerbs and ramps should be provided for crossing roads and passenger loading area.

Lifts:

- Lift call buttons should be of light-touch type.
- Lift doors should have extended opening period.

- 4.3.2.1 User feedback and suggestions of the physically handicapped4.3.2.2 User feedback and suggestions
 - of the visually impaired

Handrails:

- Materials that retain too much heat should not be used for external handrails.
- Handrails should offer a firm grip.

Signage:

• More conspicuous signage and way finding provisions can improve accessibility and facilitate information transmission to users and visitors.

4.3.2.2 User feedback and suggestions of the visually impaired

Tactile surfaces:

- Continuous tactile path or handrail to guide direction to frequently visited activity areas should be provided.
- Tactile warning before staircases is essential to prevent accidents.
- Tactile for identifying the way to entry and exit points is equally important.
- Persons using guiding sticks can be a left hander or right hander. Tactile paths should be laid at a distance from the wall surface to facilitate travel.

Passageways:

- Corners, edges or columns should be adequately protected or highlighted.
- Projections or wall fittings along access path should be above height of door head to avoid obstructing the users.
- Excessive lighting contrast, either too bright or too dim, or glare, is not appropriate.

Handrails:

- Handrails should be of colour and luminous contrast to the wall surface for easy identification.
- Handrails should be continuous and installed with raised letters or other device to indicate door opening position.

Staircases:

- Contrasting nosings are essential to assist lowvision persons to use the staircase.
- Treads of a flight of stairs should have even dimensions.



Passageway with tactile path and handrail for people of different needs.



Rails with luminous contrast

4.3.2.2 User feedback and suggestions

- of the visually impaired
- 4.3.3 Views of professionals

4.3.3.1 Universal design implementation

Signage and information:

- Emergency call bell or guide rail inside toilet should be provided to guide the way out.
- Sensory stimulation like sounds and smells are useful to transfer information.

Lifts and doorways:

• Lift buttons should be of contrasting colour and with larger size for the visually impaired.

4.3.3 Views of professionals

The views of architect and occupational therapist are highlighted below.

4.3.3.1 Universal design implementation

- Universal design concept is to be cultured among the public and should be applied in community facilities where frequent access by the public or international visitors are expected.
- Inclusion of an Access Plan and an Evacuation Plan at the start of the design stage is a good practice to ensure accessibility for different user groups and to facilitate integration of universal design as main stream design instead of some special standard.
- Provisions for means of escape for the disabled should be allowed. Options include provision of fire separating measures to contain the fire, or provision of a temporary refuge space for the disabled persons to wait for rescue.
- Guidelines governing the design of non-building works such as fittings and fixtures should be included as recommended requirements or enhanced standards.



Conspicuous lift button

4.3.3.2 General comments

4.3.3.3 Special concern for the elderly

4.3.3.2 General comments

- The limited strength and range of reach of disabled persons and the elderly should be considered.
- Ergonomics for Chinese local people should be considered and direct application of foreign standards may not be suitable.
- Spaces for wheelchair manoeuvring and other assisted devices such as shower bed and hoist should be allowed.
- Closets should be fitted with high and low hanging rods.

Passageways and doors:

- Natural lighting to passageways is good for night or day orientation.
- Auto-doors should have delay-closing device or with a sensor covering a wider area without blind spot, especially when one is in the midway of the doorway susceptible to accidental injury by the closing door.
- Low-level exit signs along corridors are useful to both normal and disabled persons in case of fire,

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especially if the high-level ones are concealed by smoke.

Way finding and communication:

- 3-dimensional maps or models are attractive and useful for communication.
- Audio and talking signs are useful for information transmission.
- Provision of a series of maps of different scale in major transportation interchange showing the district, the street, the building and information on building entrance, stairways, dropped kerbs and lifts is useful.
- 3-dimensional objects fixed at the end of handrails to rooms can be good landmarks for identification, especially for those who have not learnt the braille system.
- A braille map of the toilet layout located outside the toilet entrance is a good tool to assist the visually impaired persons to access and exit the facility.
- Floor-mounted urinal stall is an option that facilitates the visually impaired persons to tap its location



Assisted device: shower bed



Assisted device: hoist to assist transfer



District map showing streets and braille model with audio device

Architectural Services Department

4.3.3.3 Special concern for the elderly 4.3.3.4 Suggestions for a rehabilitation

by guiding stick or by foot. Provision of two tactile steps fixed on the floor in front of the urinal is another option.

4.3.3.3 Special concern for the elderly

- Rest areas along long passageways are desirable for regaining strength due to lower tolerance of the elderly.
- Pathways with covers and skylights are desirable.
- Low reflective surfaces are preferred to reduce hallucination. The use of mirrors or mirrored surfaces should be minimized.
- Doors and exits should be conspicuous for easy identification and to avoid bumping into them.
- Both active social areas and quiet corners for rest or listening to music are essential.
- Floor surface must be non-slippery and level as the elderly are easily tripped.
- Visual objects are useful for identification.

4.3.3.4 Suggestions for a rehabilitation garden

- Both active and passive activities should be accommodated. Simple exercise equipment, bars and rails can be provided.
- Sensory stimulation such as smell of flowers and sound of water, tactile exercise surface is good.
- Rest areas with shade should be provided.
- Provisions for goldfish feeding and rabbit rearing is useful for sensory stimulation.
- Safe and unobstructed access is essential.



Braille map of toilet layout and raised sign on rail Provid

n rail Provide rest area along walkways

Exercise is beneficial

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