

DESIGNING FOR BARRIER-FREE ACCESS – AN OVERVIEW

(A) Introduction

1. At the beginning of the 20th century, the average human lifespan was only about 47 years. People are now living longer today. The average lifespan has increased to about 76, largely due to healthier living, and better medicine. In addition, more people are now living with disability, as medical advances have also enabled people to survive illness and accidents, which were previously fatal.
2. These demographic changes resulted in a population that is older and more disabled than many realize and these trends continue. Both globally as well as in Singapore. For example, Hong Kong in 2006 will have over one-third of its population over 60 years of age. In Japan, a quarter of its population will be 65 and over in 2015. Based on the report by our Inter-Ministerial Committee on the Ageing Population published in November 1999, Singapore by the year 2030 is expected to have one-fifth of its population over 65 years of age.

(B) Code on Barrier-Free Accessibility in Buildings, 1990, 1995, 2002

1. In the past, community attitudes and physical barriers in the built environment may have prevented people with disabilities from fully participating in society.
2. The Code on Barrier-Free Accessibility in Buildings was first introduced in Singapore in 1990. It was then written primarily with the needs of wheelchair users in mind, and was followed with its second and current edition of the revised Code in 1995.
3. Since that time, accessibility for wheelchair users has now become a standard feature in most of our new buildings. With this, it has also become more and more common to see wheelchair users moving about freely on their own, or with friends and families.
4. As we all know, even if a person is unable to walk or if a person is without sight, or without hearing, the person's other facilities continue to function. The person will continue to possess, his or her mind and intellect, imaginations as well as aspirations.
5. The "barrier-free" design guidelines included in the New Code 2002 will help considerably towards greater independence of not only wheelchair users, but also hopefully, the elderly, the visually or hearing impaired, children, and indeed a broad spectrum of the community.

(C) Designing for the Elderly

1. The elderly often in fact have many of the handicaps of people with disabilities, e.g. reduced mobility, poor eyesight, hard of hearing etc. All these can affect any older person, in differing combination and degrees of severity.
2. Moving about by walking is one of the most natural activities that people enjoy everyday. But for an older person, it may not be easy, with their perhaps less stable gait, poorer eyesight which for example may mean that they are less able to recognize changes in floor levels.
3. Also for an older person, a fall can be a serious problem. When a younger person trips they are more likely to be able to recover their balance. Whereas an older person will have less balance and slower reaction time. They may fall awkwardly, so causing injury to themselves.
4. Injuries when they occur may take much longer to heal in older persons. Sometimes an accident to a frail older person can even cause permanent disability or even fatality. As a result, fear of falling quite often cause older people to become inhibited from going out unaccompanied in public.
5. It is interesting to note that in the IMC Report on the Ageing Population (November 1999 p151), they state "Homes should be designed so that people can stay in them for a lifetime if they wish, even when they are old and frail. For example, level flooring, at least one toilet which can accommodate a wheelchair bound person, and doors which are wide enough for a wheel chair to pass through". It is also interesting to note that the Report also discusses "whether these codes should be made compulsory in the design of homes in Singapore. The Workgroup's preference is not to make it mandatory in the first instance and to develop the demand for elderly-friendly homes through public education".

(D) Designing for the Visually Impaired

1. Vision impaired people could be classified into those who do not have sight at all and those who have partial sight. A significant proportion of the elderly have partial sight. With a rising elderly population in Singapore, the importance of designing with vision impairment in mind becomes more important. The desired result would be an environment in which people with vision impairments can travel independently and safely.
2. Many people who are blind sometimes have some small amount of residual vision, and all people with vision impairment will use whatever vision they have, together with other aids, to find their way around. Some may choose to travel with a sighted guide; others will choose to travel independently. For those who choose to travel independently, continual and extensive use will have to be made of physical cues and other sensory cues.

3. Physical elements such as walls and curbs can act as cues to assist independent travel. For example, a person using a cane might be able to follow a wall line from one point to another. Physical cues can be identified either by use of a cane, or under foot.
4. People with low vision also rely on information obtained by other ways including touch, sound and smell. Information can also be in the form of tactile or audible information.
5. Tactile ground surface indicators are one form of tactile indicator. In essence they are a physical cue, which is detectable either under foot or by the use of a cane. Tactile ground surface can serve as warning or directional indicators.
6. Warning indicators can warn of a hazard e.g. near the edge of a train platform, or steps, pedestrian crossing etc. Directional indicators are used to direct the user from one point to another. For example, a directional treatment might be used in an open pedestrian plaza to indicate a clear path of travel, or provide assistance to locate amenities such as restrooms etc.

(E) Designing for Family-friendly Facilities

1. Not only has it become more and more common to see wheelchair users, or persons with vision impairment aided by walking canes, moving about freely on their own, it is also very common sight nowadays to see families going out together to shopping centers and eating places with infants or toddlers, and babies in prams.
2. It is also the intention of the New Code 2002 to encourage barrier-free access for our young families, who will benefit from the provision of family-friendly facilities such as family rooms with diaper changing facilities, child-friendly toilets etc. in our many shopping centers and eating places. In addition, barrier-free accessibility for pram movement i.e. no difference in levels, as well as adequate circulation space of prams will also need to be considered if we wish to encourage a more family-friendly environment.

(F) Creating a More Accessible Environment for Everyone

1. When we look at it as a whole, it will become apparent that many of the environment changes needed to accommodate people with disabilities, the elderly, or the family, actually can benefit everyone. Such features could eventually be commonly provided, thus making them more attractive, and less expensive. Perhaps it may lead to a new design approach in providing a barrier-free environment for all to enjoy, all, inclusive of people with mobility or sensory impairments, the elderly, parents with small children and anyone who is temporary disabled as a result of illness or injury. A new design approach that is based on the concept of a universal design that caters for as many sectors of the community as possible.