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"Accessibility :
The Singapore
Experience"

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1. Introduction to Singapore

Singapore is an island republic with a population of just over 3.8 million spread over a land area of 614 square kilometres. With no natural resources and very little land to spare, Singapore's achievements are entirely due to the endeavours of its population and its geographical position. Thus any steps to consolidate its greatest asset, the people, are in the interests of the country as a whole. So far the dynamics behind development have been in terms of market forces, but the realisation that some aspects of national responsibility cannot be achieved by these criteria alone has brought a call for a more human face to be applied to development.

National Administrative Bodies

The **Ministry of National Development (MND)** is the government body tasked to develop Singapore into a thriving world-class city through optimal land use planning, co-ordinated urban design, comprehensive landscaping and affordable quality housing. Its objectives are carried out through the coordinated efforts of the statutory boards of HDB, URA and the PWD department.

The **Housing and Development Board (HDB)** is the sole national authority responsible for the physical planning and implementation of public housing. Due to the limited land area, much of the housing development carried out in the last 30 years has been high-rise. Over 87% of the population is housed in such HDB-produced housing, and the occupants own about 78% of these dwellings.

The **Urban Redevelopment Authority (URA)** is responsible for the planning and optimal development of national land use in the commercial and private-sector areas. The island has a well-developed infrastructure of roads and footways, sanitation and storm-water flood-control system and the development of this is largely the responsibility of the Public Works Department (PWD).

The **National Council of Social Service (NCSS)** established in 1992 is the leader and coordinating body for more than 250 voluntary welfare organisations (VWOs) in Singapore. These VWOs comprises the 5 service sectors of: disability, elderly, family, children and youth and community and health related. The Community Chest functions as the centralised fund-raising arm of the Council and raises funds in support of its beneficiaries.

2. Statistics of physical disability in Singapore

The **Central Registry of Disabled Persons (CRDP)** recorded 12,526 disabled people (with all forms of disability) at the end of 1988, less than 0.5% of the total population. This was clearly not an accurate picture compared to other Asian nations like Japan or Hong Kong. As registration as a disabled person was voluntary and the benefits of being registered as a disabled were not very great (as compared, say, to welfare-state countries like UK where they are very real and may include financial grants, parking permits and so on) few people seemed to respond. Using approximate percentages based on comparative figures of other Asian nations, a more realistic figure of 97,000 was estimated in 1988.

Due to its ineffectiveness, the CRDP was disbanded in 1989 on the recommendation of the Advisory Council for the Disabled. The Advisory Council was formed in April 1988 to develop programmes for the disabled. According to a 1988 report done by the Advisory Council, it was estimated that the population aged above 60 years would be 332,390 or 11% of the total population by the year 2000, increasing to 26% in the 30 years following. This proved to be a strong basis and gave an added urgency to the justification for providing an accessible physical environment for an aging population.

3. Development of disability awareness in Singapore

The special needs of people with physical disabilities have been a matter of concern for many sectors of the government and professional bodies. Since 1978, all of Singapore's New Town centres and the ground floors of housing blocks built by the Housing and Development Board have included some accessibility features and modifications have been implemented as part of their 5-yearly maintenance cycles. The provisions are in line with HDB's own guidelines which include provisions of lift landings on each floor, ramp access etc. In this respect, HDB led the way in both provision and management of facilities benefiting those with access difficulties.

Interest in providing a wider barrier-free environment was also growing during this period. A study team was formed in 1980 to consider the necessity of introducing legislation to achieve "a barrier free environment for the disabled and the aged". The 1981 Yearbook of the Singapore Institute of Architects (SIA) printed the findings of the SIA Research and Documentation Committee (1979/80) in the form of a design guide, entitled "Barrier-free Design for the Physically Handicapped in Singapore". This was intended as a basis from which architects could convince clients to voluntarily adopt accessibility features into new buildings.

In 1983, a committee recommended that the building regulations should be amended to incorporate an Accessibility Code, that "basic accessibility features" should be incorporated in all government buildings, and that public walkways, parks and gardens should be similarly accessible.

Some measures were undertaken in reaction to the idea of introducing legislation on all new buildings. In July 1985, a committee was appointed to find solutions to the problems of accessibility to buildings by disabled users. The outcome was to recommend the voluntary incorporation of features to conform to a set of guidelines proposed by the MND. There was however no legislation adopted to force building owners to make new buildings accessible. Instead, The government statutory boards would set an example in providing basic facilities in accordance to the MND guidelines.

For their part the Singapore Institute of Architects and the Real Estate Developers Association of Singapore (REDAS) agreed to adopt these guidelines and persuade their members to incorporate "basic facilities" in their new developments. In practice the profession and the private sector were slow to voluntarily adopt these standards. Perhaps too, developers were not convinced that they were worth applying. It seemed that without some form of legislation a truly barrier-free environment would simply not happen.

In 1988, a set of "Agendas for Action" with the purpose to look at aspects of Singaporean society which would benefit from a more "humane" form of social development was formulated. Thus the needs for special sectors of the population were studied, leading to the publication of a report in August 1988 on employment, accessibility and transportation for disabled people. Of interest to this discussion are the proposals on accessibility, which called for the introduction of a mandatory Accessibility Code for all buildings (including existing ones).

The Advisory Council on the Disabled was formed in April 1988 "to work out a set of programmes for the disabled as part of a government plan to implement the Agenda for Action" Their report, and recommendations, submitted in August, were made public in the more comprehensive "Opportunities for the Disabled". This put forward a convincing argument for (amongst other things) accessibility of all communal areas and facilities for disabled people. By April 1989 the new Building Regulations were on the statute books, whilst the Code on Barrier-Free Accessibility in Buildings, to which it refers, appeared in February 1990.

In an effort to try some way to improve the situation of inaccessible buildings, the Singapore Government introduced a scheme in 1989 to encourage employers to modify their existing premises to allow access for physically disabled staff. The costs of such improvements could be offset against tax, if the work complied with the Code on Accessibility. Tax deductions to a maximum amount of S\$100, 000 could be claimed for such expenditure.

4. Part played by the Handicaps Welfare Association to promote Accessibility from the early 1990's

Since the introduction of regulations requiring accessibility to all new or retrofitted buildings, it had become incumbent on government agencies to match the level of facility in the street approaches to building. In 1988, the Public Works Department (PWD) undertook a survey at the request of the Committee on Employment, Accessibility and Transportation, to look at the accessibility problems in the Orchard Road area, one of the main commercial, hotel and shopping districts of the City and Civic Centre of Singapore. Thereafter that same department began to draw up proposals for an ambitious scheme for a level, unimpeded walkway system for both these areas and for the downtown financial business district.

It was also during this period that the interest on improving accessibility also heightened within the Handicaps Welfare Association (HWA). In 1990, a survey team comprising of physically disabled and non-disabled persons from HWA conducted an access survey along Orchard Road which was already in the midst of upgrading.

The survey along the entire stretch of Orchard Road was carried out over a weekend and Sunday). We noted the areas that needed improvement and suggested how these improvements could be carried out. The reports were compiled. Subsequently, a meeting with the Chief and Assistant Transport Engineer from the PWD was held. They were receptive to the need to make the necessary changes to the walkway. However, there was a major road intersection with an underpass that was inaccessible. As it was not possible to provide a lift at this underpass, the PWD agreed to a compromise and retained the surface crossing to make the junction accessible.

As a result, the stretch of pedestrian mall along Orchard Road is now user-friendly. The PWD also assured us that greater emphasis would be placed on enforcing the Code on Barrier Free Accessibility in Building, 1990 (hereinafter referred to as the Code Book of 1990).

Access is an important issue for people with disabilities. Without access, we may never leave our homes and lead full lives. Access enables disabled people to go to school, find employment and contribute as equal members of society.

It is always important to look at access issues from the viewpoint of all members of the community i.e. the children, pregnant women, persons with trolleys or heavy luggage's, elderly and the disabled people.

In the early 1990's, it was rare sight to find disabled persons moving freely along the streets of Singapore. This was largely due to the inaccessibility of public places and public transportation.

During the years that followed, the Association also communicated with various government agencies and non-governmental bodies to include access features in their buildings. We also carried out bi-monthly surveys, usually over the weekends. We surveyed other major roads in the city, office buildings, shopping centres, hotels and taxi stands. We even worked with the hospitals regarding the reservation of parking lots for drivers with disabilities. There were times when we had to take annual leave from our work to attend to these surveys or meetings.

When it became more apparent to the architects and developers that the Handicaps Welfare Association (HWA) was taking active steps to promote accessibility, we started receiving requests from many architects and developers who were keen to provide access features and comply with the Code Book of 1990. On many occasions, we were invited by architects and developers to the sites of partially completed buildings to determine if the provisions for disabled persons were correct or to propose how these could be modified.

During these surveys, we found that there was a need to revise the Code Book of 1990. To enable us to understand in greater detail the access needs of disabled persons, we had to equip ourselves with the necessary knowledge. Thus, we obtained access code books from many countries renowned for their access provisions such as Canada, Japan and the United Kingdom. We set up an eight-member task force comprising of disabled and non-disabled persons. We held monthly meetings after office hours on weekdays to discuss and understand the access code books of other countries. In addition to these monthly meetings, we also conducted surveys to determine if our interpretation of what we had read in the access code books was correct.

Since we needed a deeper understanding of access features, we undertook more surveys and had more discussions with architects and developers. We also had to learn how to read floor plans and the blueprints of buildings.

It was with a better knowledge and understanding of our access needs that we approached the Building Control Division (BCD) of the Public Works Department (PWD), and the Singapore Institute of Architects (SIA). Both parties agreed that it was time to revise the Code Book (1990). We held regular monthly meetings with senior representatives of BCD and SIA for more than a year to revise the Code Book.

Initially, it was difficult for them to understand why it was necessary for toilets to be made more spacious, with correctly placed grab bars, or why ramps should be gentler and parking lots wider. However, progressively, we were able to make our needs better understood and they became more willing to accommodate the needs of disabled persons.

We continued with site surveys, which were invaluable in giving us the insights that we needed for our contributions to the revision of the Code Book.

In December 1993, HWA held an Open House to celebrate its twenty-fifth anniversary. We took this opportunity to involve HWA members in a survey of the suitability of provisions as proposed in the revised Code Book. HWA members used ramps of various gradients, mock-up toilets, doorway approaches, and tested height and forward reach dimensions. Through this exercise, we were able to collate the necessary information to determine more accurately the needs of the disabled people in our society.

We must always keep in mind that the access code books used in other countries are designed to suit the local conditions and needs of disabled people in those countries. It is essential to ensure that any revision to an existing code be carefully thought out and acceptable to the disabled persons living within your own country.

In 1994, a large-scale public awareness campaign titled "Friends of the Disabled – Be A Friend, Show U Care" was launched. The campaign was spread over two weekends. Its objectives were to create public awareness of people with disabilities and to encourage members of the public to develop a more positive attitude towards people with disabilities.

As part of the campaign, simulation games were organised for members of the public to develop a better understanding of the access needs of disabled people. We had approached an event organizer to build the necessary props for the simulation games. With the event organiser, we brainstormed to create games that were enjoyable yet would in a subtle way, educate the public on the barriers faced by people with disabilities.

There were five simulation games, which were all directed at members of the public. These are described below:

Obstacle course: using a wheelchair to negotiate a slalom course, wheeling up and down a gentle ramp and finally throwing a ball into a net. This gave the opportunity for participants to gain first-hand experience in maneuvering a wheelchair.

Reaching for objects: participants were required to sit in a wheelchair and to reach for items that were placed at various heights (this was to give them an idea of the height reach of a person in a wheelchair).

Writing: by placing a pen on the chin (through the use of a strap), the task was to write the words "I Care" on a board.

Jigsaw: each participant was given a pair of gloves; each glove had the thumb and one or two of its fingers tied together. With these gloves on their hands, participants were to pick up objects in different shapes (for example, squares, circles and triangles) and fit them into compartments of similar shapes (such as those found in children's toys).

A signature banner exercise for members of the public to pledge to be friends of disabled persons was carried out at 15 major shopping centres and town centres all around the island. A souvenir pen, which carried positive messages on disability, was distributed.

A public forum on "Disability and Trauma" was the final event of our public awareness forum. Posters, which highlighted physical, social, psychological and attitudinal obstacles which disabled persons faced daily, were also displayed in prominent public places.

The public awareness campaign was highly successful in that it allowed members of the public to understand the humanity of disabled persons in an unthreatening manner. More than 15,000 people took part in the various activities that were held nationwide.

In early 1996, the revised Code on Barrier-Free Accessibility in Buildings, 1995, was published (hereinafter referred to as the Code Book of 1995). In order to help the staff of the PWD and members of the SIA to better understand the access needs of physically disabled persons, two seminars were conducted. During the seminars, we highlighted the changes found in the revised Code Book of 1995. More importantly, we explained the rationale for the changes and highlighted the importance of the different dimensions found in the Code Book of 1995.

With the publication of the Code Book of 1995, we felt that it would be useful for HWA members to have a compilation of accessible buildings in Singapore. To complete this mammoth task, we identified committed disabled and non-disabled persons from all walks of life. Many of them had full-time jobs. A full-day classroom styled training programme was held on a Sunday to provide a detailed briefing to them, as members of survey teams, on how to conduct an access survey. The training included what to look out for, how to take correct dimensions, and how corrective action could be taken. The briefing emphasized the rationale behind the various dimensions for access features. We also designed a detailed and comprehensive survey format to enable us to record our findings in a systematic manner.

The group was divided into three teams. Each team was assigned specific zones or districts, which they were to survey. During the initial surveys, those of us who were more familiar with access issues accompanied and guided the teams. We were on hand to pinpoint the essential aspects of conducting a survey and to explain on site the access problems encountered by people with disabilities.

In late 1997, the National Council of Social Services approached HWA to update a guide book titled *Access Singapore*. The guide book provides useful information on accessible features in public places such as government departments, shopping centres, hotels, and tourist attractions. The staff and volunteers of HWA spent six months carrying out access surveys and tabulating the results. The revised access guide book was printed and distributed in 1999.

In early 1998, the Singapore Institute of Architects organised a competition among architects in the private sector to identify the most accessible buildings in Singapore. There were four categories, namely, residential, open area, commercial and non-commercial buildings. As this was the first time such a competition was held, only 12 entries were received. The judges for the competition comprised of representatives from various sectors: School of Architecture, National University of Singapore, Public Works Department, Ministry of Community Development, Singapore Institute of Architects, and Handicaps Welfare Association

With the introduction of this competition, architects will be challenged to create not only accessible buildings but also buildings that are aesthetically beautiful and whose access features blend with the surroundings.

To date, we continue to have regular sessions with the staff of the Building Control Division, which is now known as the Building and Construction Authority (BCA). During these sessions we discuss the issues and problems that they encounter when surveying buildings before issuing temporary occupational licenses (TOL). At the same time, we provide their staff with opportunity to understand what it feels like to move around in a wheelchair. These simulation exercises always leave a lasting impact on them.

It has always been our firm belief that understanding the rationale for the dimensions of each access feature is more important than the dimensions itself. We emphasise on the need to understand the "how" and "why" of access features as these would enable problem solving in specific situations specially for officials and enforcement officers. In this way, when they face issues not found in the Code Book of 1995 on which they have to make decisions, they can use their knowledge of the rationale behind the dimensions to determine how appropriate and usable the features as proposed would be for disabled persons.

Towards the third quarter of 1999, the Handicaps Welfare Association was approached by the Building and Construction Authority (BCA), formerly known as the Building and Control Division, to work jointly on revising the Code on Barrier-Free Accessibility in Buildings 1995. We have managed to get representations for the elderly and visually impaired community to give their inputs to this code book so that the needs of the other groups could also be recorded. The revised code is expected to be published in early 2001.

Having been involved in promoting accessibility for all since the 1990s, we are greatly heartened to see an increased interest in recent times by the authorities in this area. Access is now a standard feature in new office buildings, shopping complexes, and residential areas in Singapore and it is common to see disabled persons and elderly persons moving about freely with their families and friends.