

## **From Barrier-free Accessibility to Universal Design**

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Today I'm going to share the Singapore experience on our journey towards universal design. I say "towards" as universal design is a continual process, there is no end to it, so there's no such thing as we have arrived. Just remember we always need to continue to strive to build an inclusive society.

Singapore is about 720 square kilometres, an urban city, high rise, high density, population of 5.54 million and over 80% of the residents live in high-rise public housing where 90% of occupants own their apartment on a 99 year lease.

In the 1950s Mr Lee Kuan Yew had a vision of a garden city when most of the area was slums. He thought a garden city was more than about wellbeing; it shows how well the country is managed. This is the benchmark we were given and now we have well-built and sanitary buildings.

Barrier free access to buildings was first raised in the 1980s and we developed a good practice guide. But who cares about good practice? So in 1989 we changed the building control regulations to mandate the provision for barrier-free accessibility to buildings. In 1990 we established a minimum standard code, which was really minimum – a 24 page document with a focus on wheelchair access. But it was a turning point.

Now the population is ageing. Today 1 in 8 people are over 65 years. By 2030 we will have 1 in 4. Ageing well and ageing in place is something we believe in. And we need to have family friendly environments. So we needed to do a lot to improve the built environment. This also raises interconnectivity, not just within the building, but from place to place. Footpaths are now an issue.

As a garden city we want to keep our trees. In a tropical climate they are big and footpaths are narrow. Then we think about cycling – footpaths are a work in progress for us.

In 2006 we developed an Accessibility Master Plan with four main themes: maintain existing access provisions; mitigate existing challenges; tackle future challenges; and raise awareness and capabilities of providers – builders, and architects. Education is critical and a continual process.

I will talk about the existing challenges and the future. We developed seven programs that we put through the whole of government and other agencies in a holistic manner to tackle the existing and future challenges.

In 2006, to mitigate the existing challenges with a large stock of buildings built before the mandatory requirement in 1990, we implemented a five year accessibility program. The aim was to promote and to facilitate the upgrading of key buildings and key areas of both private and public sectors to have basic access features – an entrance on the entry level and

at least one wheelchair accessible toilet. We started small so that we were not seen to be asking for too much – and it was voluntary at this time to give the industry time to change their thinking.

We started first with the Government which could take the lead. We started with public buildings and set the time for improvements to be 2012. But we wanted Government to do more than basic. We briefed public agencies, talked to them, and checked them every six months – we almost harassed them. We were able to get high level people to email all the heads of government agencies to assign a budget to the upgrades. By 2012 almost all public buildings were accessible.

The Land and Transport Authority had the greatest change. They were built when people believed wheelchair users would find it easier to take a subsidised taxi. In 2004 there was a major program to upgrade stations and to improve connectivity, the roads, bus terminals and bus stops were improved too. Very soon we will have 100% wheelchair accessible buses.

In Singapore we have rather high kerb sides that makes it rather difficult to ramp down from the footpath. So recently the Land Transport Authority decided to reduce the minimum roadside kerb from 175 to 125. It will make it easier to ramp down. So these might be little details, but it goes a long way in providing a smooth, accessible built environment.

Eighty percent of people live in public housing, so if you can improve that, you improve the lives of eighty percent of the people. Lifts were installed that stopped at every floor. Previously they stopped only at ground, level 5, and 10 or 11 of a 12 storey building. More than 90% of these buildings now have full lift accessibility. Then the access around the housing estates needed to be addressed.

But what about the private sector? We have no anti-discrimination act, and there are no mandatory requirements. As it was unlikely that the private sector would respond, we provided a capital incentive scheme of a 40 million accessibility fund to encourage uptake. We co-pay up to 80% of the basic access features and 40% for all other improvements to a cap of \$300,000 per developments. However, there is still resistance and it has been a struggle, but we have 130 buildings that have benefited from the fund.

Along Orchard Road we went door knocking to sell the incentives. At the time only 41% of buildings were accessible in 2006. By 2012 88% were found to be accessible and it should be more now. It really required persistence on our part to keep “harassing” the building owners.

We may have to put in a regulation in the future if we can't get further improvements, so we may put in a regulation. But we need to look to future buildings and for this have enhanced the access codes to look beyond basic compliance.

Barrier-free accessibility encourages a mindset that you design a building first, and then you start removing barriers to comply with the Building Construction Authority's, requirement. That's no good. We needed people to think accessibility first, not last. I said let's change the name. That was when we started looking into interconnectivity requirements as well. In 2013 we incorporated some universal design concepts. This meant looking at things like

hearing augmentation, putting in provisions for children, mothers, as well as wheelchair users.

The code was reviewed with a tripartite committee: the public, private sector, and people's sector including NGOs. We went on field trips, measuring and discussing how could we overcome some of the conflicts of building requirements and user's needs. Now we must work on the adoption of universal design.

In 2006 we began a promotion campaign. We published universal design guides, organised a course, and had public education sessions. We even went to schools because if young children understand they will grow up to be good professionals.

Most people know about the Ron Mace definition of universal design and the seven principles, but for me it more about the people and human centred design. I have three key things: to make it available for use by everyone; to make it easier to use; and making it for a diverse population, including religious and cultural differences.

The main thing is to encourage people to go beyond code compliance and to think about universal design at the conceptual stage and not an afterthought. That will make it cheaper. People say it is expensive but that is because they never think about it first. It is just good design. A creative mind can do more.

We decided we needed to do new branding. We want people to say a UD building is good. In the early days, around 2006, we started the BCA UD Award. In 2012 we modified it to have the UD Mark of Certification.

BCA means Building and Construction Authority. The UD Mark is a voluntary certification scheme for new and existing buildings. The difference between an award and certification is that the BCA will assess a building at its completion and if it meets the criteria we will give you an award. Certification is a two stage process. The building is assessed at the design stage and again upon completion. We also give the developer public recognition and a plaque for the building.

The BCA now likes to get involved as early as possible in a development. When we get notice of a new development we ask if they would like to have UD certification. We start talking to them, "What can you do with your building, what are you doing, who are your users?" Start getting them to think of their users, start thinking of new things to incorporate in the building to help the user. So when your design is completed you come in and you make a submission and we find it is good, we will give you a certification. It's either a UD gold, gold plus or UD platinum. This is called upfront branding. If you are a developer, we allow you to put that into your brochures, into your sales, into your advertising that this building is given a BCA UD certification gold or gold plus. So it's called upfront branding, telling people that my building is UD.

Then we continue to encourage them to improve further from their first initial design. We encourage them even during the construction stage to make amendments or to do something, then when the building is completed, you can get higher scoring. You can also get BCA points for user consultation.

But it is not just about individual features. We want a holistic design approach and to look to innovation. We talk about design integration. Everyone talks about UD constraining creativity, but it isn't true. The points system includes innovative UD strategies and good aesthetic integration. 50-65 points gives a certified UD Mark. Gold and Gold Plus is up to 80 points. More than 80 points is Platinum, but you must show you went above and beyond the checklist requirements and show holistic planning and design and be user-centric – the Wow! factor.

The new IKEA building is a “Wow” building which has a family-centric philosophy. Good signage, family facilities, family car parking, a trolley that fits a wheelchair, a prayer room for Muslim staff and customers. So it was not just about the building itself, but the whole user experience.

Now I'm going to show you two fantastic private housing development condominiums. So I'm going to illustrate the point that universal design, creative design, can co-exist and do very well. The developers that said "I want UD Mark Platinum, I want it". So these developers really worked hard with the local architects as well as the other foreign architects. For housing of course you are looking into accessible, older friendly, plus the whole built environment that is user friendly to people of diverse groups.

So this is the other one, the Interlace. You look at the design. It's like boxes stacking on boxes. How are you going to find your block? The first thing when they came to me - I'm glad they came to ask very early at the design conceptual stage - I said, "How do you look into wayfinding, what are you going to do?" So those are the issues that we started looking into and solved them.



And this project, the Interlace, just recently got the World Building of the Year at the World Architecture Festival. And I'm just saying that they co-exist. Design creativity and universal design is really something that can come together. Never ever allow the architects - if there's any architects here, never ever allow them to say, "It cuts my creativity". Never allow that.

UD, or universal design, is more than a set of guidelines. It is a dynamic process of responding to and innovating to meet the present and future needs of the users. With that, I thank you.

**Note:** At the end of question time Ms Goh was asked about the way forward for Australia. She replied that Australia needed a central body, to form a centre “and we can have alliances with other countries and come up with some common understanding and share knowledge... To my mind you still need a central body to help disseminate information, to give some lead.”