

2nd Australian Universal Design Conference 2016
Transcript of the presentation by Ms GOH Siam Imm
From Barrier Free Accessibility to Universal Design

MS GOH SIAM IMM:

Good morning, everybody. 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 for the better to build an inclusive society.

My title is "From Barrier-free Accessibility to Universal Design". Singapore, for those who do not know, is actually a small dot on the south of Malaysia and if you compared it to Australia, you just couldn't find it. It's about 720 square kilometres, an urban city, high rise, high density, population 5.54 million and over 80% of the residents live in high-rise public housing. When we say "public housing", they were housing built by the government, the Housing and Development Board, and 90% of these people own their apartment in a 99-year lease.

In the early days in the 1950s this is what you would see in Singapore, slums, dilapidated, no sanitary, and our founding father - you might have heard of Mr Lee Kuan Yew - he had a vision of a garden city. In those days we were talking about a slum and he was talking about a garden city. A city in a garden is the vision that he thinks is not just for the wellbeing, it actually shows how well your country is being managed and is the kind of benchmark that he gave to himself and today we have these high-rise, high-density, of course well-built, good sanitary buildings.

Yes, in the early days did we provide for persons with disabilities? In the early days we were more concerned with putting food in your stomach, putting a roof over your heads. These are the most urgent things we did. That's how we had this public housing program which progressed to today where it houses 80% of the people.

And the issues of barrier-free access to buildings - I'm just talking about barrier-free access to buildings - was first raised in the 80s, discussed, and we first came up with a good practice guide. But you know, good practice guides are just good, but who cares, you know? So finally in 1989 we changed the building control regulations to mandate the provision for barrier-free accessibility to buildings.

So how do you do that? We developed a code on accessibility in buildings 1990 and to set the minimum standard I must say that standard was really minimum. The main provisions were really talking about wheelchair access and from front to back it's 24 pages. Now we have - the main focus was wheelchair access and in those days we had a ramp of a gradient of 1 to 10, rather steep, but you have something, it's better than nothing. At least that is really the critical milestone that really changed the barrier-free access in Singapore.

As time went by, the reality set in, the population is ageing. In spite we were being relaxed about immigration, but the island is only that big. No matter how much we go on to

encourage, they just continue to branch. So today we are 1 in 8 people in the age group of 65 years and above and we are estimating that by 2030, which is not too far away, we are going to have 1 in 4 65 years and over. That's a frightening thing - two persons supporting one 65 years and above.

So what do we do? We certainly need to do something to help the people to age, age well, and ageing in place is something that we believe in promoting and providing.

So accessibility in the built environment is identified as a key enabler to successful ageing in place. So we need to do a lot of things to improve the built environment.

I just mentioned about the regulations started in 1990. There were many buildings that were really not barrier free. Those pictures that you've seen there, they have two levels, the developer maximises the shop fronts and these were the things in fact when I'm walking around Australia's streets I see the same thing is happening or happened. So how to solve all these problems? Of course we're talking about wanting to encourage mothers, encourage - you need to have a family-friendly environment. We're talking about ageing. Are they unique?

Then the other problem is the interconnectivity, not just within the building but from place to place. I can get around within the house but can I get to another building? So you start looking around - oops, you've got a lot of problems. Even your side walk is a concern. In Singapore - you know we were very concerned with trees. In fact trees occupy a lot of space. It's a tropical climate. The trees are big, the roots are as big. Therefore they take up a lot of space. So our footpath is rather narrow. So how to solve that problem. And then you start thinking about cycling. Yes, some work is in progress in looking into the workability of all these footpaths.

So in 2006 we knew we had to do something, so we developed this Accessibility Master Plan to create a user-friendly or an inclusive built environment through four strategic thrusts. One is maintaining the existing accessible provisions, mitigating existing challenges, tackling future challenges, and another very important is raising awareness and capabilities of providers, of architects, of builders. If you don't educate them, they can never do a good job and this will be a continual process that we put in a lot of effort. But I'll not talk into detail on these two strategic thrusts, I will talk about the existing challenges and the future.

So there were seven programs that we put up in a holistic manner through whole government effort and agency effort.

So to mitigate the existing challenges which we mentioned about large stock of buildings built before the mandatory requirement in 1990. In 2006 we put up this five-year accessibility program to promote and to facilitate the upgrading of key buildings and key areas of both private and public sectors to be accessible - to be accessible with at least basic accessibility. Why we have to say that? You ask them to comply with too much, so we start small. When I talk about basic, we mean first accessible entrance to an accessibility at the first level and the other one will be at least an accessible toilet for wheelchair users, for older folks. So this is the minimum you start off with, voluntary upgrading. Because in Singapore the regulations do not apply retrospectively. If your building were approved

without accessibility, they can continue to just remain so unless they come in and do a major retrofitting work that the building control authority will impose upon them to change. So otherwise nobody would change. So we need to do this encouragement, facilitate.

First we start with the Government. In Singapore - we are always called the nanny state. The Singapore Government goes into everywhere. So we say the Government starts first, you must take the lead. So we work with the agency to upgrade the tier 1 buildings, buildings that are frequented by members of the public, and to be with at least basic accessibility by 2012. But of course if they're Government buildings, they will do more than basic. So we give briefings to the public agencies, we call them in, we talk to them, we gave them check monitored and every six months we almost harassed them "what have you done, what have you done?" So you need to really continue. But of course you need very high-level people really to email all the heads of the government agencies to say "put out a budget and do something". By 2012 close to 100% of tier 1 buildings, public sector buildings, were accessible.

Then maybe we talk about some public sectors that have really done the job. There is the Land and Transport Authority. Our train stations were not barrier free. They were built in the day where the belief or they mistakenly believed that if you're a wheelchair user, evacuation process, they say I rather provide you money to take a taxi. But as time went by, you realise that cannot be so. So then in 2004 we put up a big program to upgrade all the train stations to have at least one entrance barrier free access and of course I just mentioned about the roads, the interconnectivity. So they went on to put up roads, to improve the road facilities, bus terminals, bus stops. You need to improve the bus stop, then you can have low-level accessible bus coming in. Yes the buses are coming in and very soon we are going to have 100% wheelchair accessible buses. Pedestrian crossings and in Australia and in Singapore we have rather high kerb sides that makes it rather difficult to ramp down across. 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.

Then about public housing I say 80% of people stay in public housing. If you can improve that, you improve 80% of the lives of people. So the HDB, the Housing & Development Board, put a lift upgrading program since 2001. Why do we need to do this lift upgrading? In the early days remember we were quite poor and we started building public housing very fast. They started with 12 storey. And they were one of the expensive items. And the lifts stop at only the ground floor, fifth Storey and 10 or 11 storey, which means quite a lot of people do not have barrier free access. So this is a mammoth job that they need to provide lift accessibility to every floor. So those days I recall low-cost housing we now turn into this thing called affordable housing which needs to be improved. So the new ones, they do have lift accessibility, but the old ones what do we do? So they put up this lift upgrading program to improve, to either open up the doors, change the lift speed or in certain cases they really put up - because people are continuing to stay in there and you need to improve and that is a \$1 billion project for 14 years. And finally they've completed. Over 90% of these blocks have lift accessibility.

And of course you need to improve the overall housing estate and that was another plan where they go in to improve the accessibility around the blocks.

What about the private sector? There's no mandatory requirements, there's no anti-discrimination act. We continue to promote voluntary upgrading, but you can promote and nobody may know, will not do anything. So we have these capital incentives which we put up 40 million accessibility funds to encourage people who have no immediate plan to do a major upgrading work for the building, to do this accessibility upgrading work. We co-pay up to 80% of the basic accessibility features and 40% for all other improvements if they want to do it to a cap of \$300,000 per development - not that easy because they will tell you no, it takes up my good valuable spaces. Even if I want to do, am I willing to give you extra? So there's still a big struggle, but nevertheless we have currently 130 buildings that have benefited from these funds.

We started with key buildings, key areas, so let me tell you the story of Orchard Road. We went to Orchard Road in 2006. We surveyed the place. Most of the buildings were built before the 1990s. There is less than 50% - only 41% were accessible. So we went to those buildings that were not accessible, we talked to them, we were literally door knocking, disturbed them, some of them - I jokingly say we "harassed" them.

After a few years the results came in. Some of them took up our accessibility funds. At the end of 2006 we started a survey. It was 41%. By 2012, 88% were found to be accessible, and by now it should be more than 90%. It means you do need that special effort to "harass" them if you like to use that word.

So existing work we're still in progress. One day we find that we couldn't improve enough, we may also put in a regulation to get people to do it. But for the future, while the existing we have to continue, we need to look into future buildings. So two key activities we do is to enhance the code on accessibility. The code on accessibility provides a minimum standard for compliance. So therefore if you continue to raise the standard, the building will become better. The other one will be to promote the adoption of universal design. I'll talk about it later.

Now about the code. Yes we have the code. We call it a Code on Barrier-free Accessibility in Buildings. I just mention 24 pages, mainly wheelchair access. We did a revision, we improved some of the provisions, and in 2002 we improved. In 2007 we decided to do a little change. We had been talking about barrier-free accessibility. It is that mindset that you design a building first, then you start removing barriers to comply with BCA's, Building Construction Authority's, requirement. That's no good. So the first thing we wanted is accessibility first, no more do your design, think about how to comply with the code. Accessibility and it's no more just confined to the buildings, we are talking about the whole built environment. So the time I was chairing this, I said let's change the name. We started the name to give people that mindset. It's going to be a code on barrier-free accessibility in the built environment. That was when we started looking into interconnectivity requirements as well.

In 2013 we revised again. This time we enhanced more provisions for persons with disabilities. We incorporated some universal design concepts. That's when we started looking into mandatory requirements for hearing enhancement systems, which I know Australia is pretty big on that. You were saying about people's hearing loss. It's a good practice, nobody do. So this is a new requirement.

We also look into this - no more talking about barrier-free accessibility, talking about accessibility to all. So we started putting in provisions for children, for mothers, for nursing rooms for mothers. So these were some of the changes we made.

Yes the code was reviewed with a tripartite committee. We involved the public, private and people's sector. The public sector I mentioned they were big developers. They have to be in to get the buy-in to give their peace of mind. We also involved - in Singapore we call it voluntary welfare organisations. Over here you might call it NGOs. It is organisations - non-profit organisations that may come with government funding, with government funding, to look into certain sectors of people. So we involved them in the code review, we held a focus group discussion to improve this code.

Then there was a situation where I went up on an outing with the users to understand their needs, to validate some of the provisions. One of the pictures you see me bending down measuring the depth of the grill. Why do I do that? Because it shouldn't be too big it traps the wheelchair. But how big can we go? In Singapore when it rains it doesn't just rain, it pours. You just have to have as much opening as you can. So how to balance these two requirements, how much can we go with it? These were the things we worked with them to say, "Okay, how far can we go to allow people to have this opening, to allow water to drain into the monsoon drain".

So much for the code. We come to talk about adoption of universal design. So since 2006 we started this whole promotion. We published UD guides, we organised UD courses, we even had public education. We go to schools. We believed that when they're from young, if they understand it, they'll grow up to be good professionals to build a good UD environment - seminars, exhibitions and so on.

But what exactly is universal design? What do we mean by universal design? Is our understanding and your understanding different?

Universal design is a term that came out from the US, but today you speak to some of the Americans, they don't even remember. Some of them call it human-centric design. The Europeans call it design for all. The British call it inclusive design. The British always don't agree with the Europeans. That's why they had Brexit. They finally had Brexit. But Brexit or no Brexit, it doesn't matter, they mean the same thing when we are talking about universal design, they are the same philosophy the same thing, talking about design to build an inclusive environment.

So we used this definition that came up from Ron Mace - universal design is not just talking about built environment, it's talking about products as well. He said "The design of products and environments to be usable to the greatest extent" - while we wish to have it all, but I need to be realistic, it cannot be all, it's to the greatest extent possible "by people of all ages and abilities".

And of course we know about the seven principles, but I don't usually delve into the seven principles. To me it's too much for the people. I will just look into three key things when I do promotion to my people. First, accessibility - to make it available for use. Two, usability, making it easier to use. Diversity - making it for most people to use and for most

people we are talking about persons with disability, we're talking about older people, we're talking about children, but that's not all. We need to consider other aspects - religion, culture. Never ignore these aspects because this is part of what makes every individual different. So these are things that we need to consider as well.

So why do we promote universal design? We have a code which I say we improve every year - every five years I mean. Yes, the whole main thing is to encourage people to go beyond code compliance and what's important is to think UD at the design conceptual stage and not as an afterthought. That will make it cheaper. People always complain it's expensive. It's because they never think about it, then suddenly you have a user consultation, everyone is starting to say "extra costs". If you start thinking about it, it's just talking about good design.

So we have to design with users' needs in mind. So who are the users? We are talking about persons with disabilities, we are talking about older peoples, we are talking about also pregnant women - don't ignore that - we are talking about families, young children, nursing mothers. These are the groups of people that you need to consider because the code can only do that much, but if you have all these people in mind, a lot of things change. A creative mind can do a lot more.

And how to encourage people to do? We decided that we need to do new branding. You know Donald Trump is the brand. Donald Trump is one of the least inclusive persons. I'm talking about branding. That's how the whole world works, otherwise he wouldn't be getting his votes. You brand, you want people to say hey a UD building is good.

So in the early days - when I say early days - we only started universal design in 2006, we actually had the BCA UD Award. Then by 2012 we decided that we would modify a bit. Then we have the UD Mark Certification, which I'll give a little more detail. Do I have enough time?

So let me talk about this UD Mark Certification and how I'm talking about branding UD. BCA is not Building Code of Australia. Remember I say BCA means Building and Construction Authority, that's my organisation.

BCA Universal Design Mark, UD Mark, is a voluntary certification scheme for new and existing buildings. What's the difference between an award and this certification? An award is when you have completed your building and you submit for us to evaluate and then we give you an award, hey, it's a good building. But this is a little different. We do a two-stage assessment. One is at design stage and the other is upon completion.

At design stage we give you a design checklist to help you if you don't understand what do you mean by universal design? They always say "Hmm, it's very abstract, what do you mean by UD?" A developer says "What do you mean by UD, it's too abstract". So we gave a checklist to give some idea of what we meant by that.

Then upon completion we give you public recognition. We give you a display plaque to put on your building that it is a UD building.

Actually we really want to go through a whole building life cycle starting from planning and design to operation and maintenance - the whole life cycle. So the UD process - with early engagement, it means if we see some building coming up, since it's a building and construction authority we have the advantage of knowing projects are coming up. We write to them, we call them up and say "Hey, would you like to come in for UD certification?" And of course every year we sent out a circular to say there is this UD certification and every May we will give a BCA award on the BCA Award nights.

So early engagement is important. 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 advertisement, 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.

We have different categories: residential, non-residential, refurbished buildings, and we even have a category called parks and public spaces. We are going to introduce one more, it's called family-friendly - for family-friendly businesses. That will focus on businesses, because we always make a business case, otherwise these developers, the bottom line is "how much money do I make", so you must always give them something to think about that, it's useful to them.

So that's how we score. The prerequisite is complying with the code, no need to bargain. If you cannot comply with the code, no UD mark. First you comply with the code. Then you come in and talk about the extra, so the extra we divide into two main sections which you must score minimum points for each section. Otherwise the provision will be unbalanced. So we need you to make the features - user friendliness, design integration to score certain points, accessibility, connectivity, safety - safety is one aspect. Don't ever think that is not, safety is important. And even operations and maintenance - why? You can design something good and you don't maintain it well, it's just a bad building.

Then I mentioned about the checklist, about people not understanding UD, about it being abstract and if I were to encourage a developer to come in, "I want to, I want UD platinum, but how do I know it will get UD platinum, I don't mind spending money but I must know my end point". Okay, we gave you a checklist and from the checklist you know how well you have provided. So it started with that. Even the developer is not an architect, he is able to see whether he's doing it well.

So this checklist example - you have an accessible room, in the code we say 1.2 metres is the minimum width, but if you provide bigger routes, we give you one point. If you provide for 50% of circulation we give 2 points. If it's for universal design, we give 3 points. So this is how points are being added. You provide more and more points, provide more and more points. So you can have family, child-friendly features, you do design with

children's toilet, okay, good, three points for you. But did you put it at the right place or did you put it around the corner so parents have difficulty finding them? If you do it at the right place, we give you two more points. So this is how points are added up.

And of course I mentioned about the other thing not just a feature. We want a holistic design approach and we want you to look into innovation. So the developer must come in to talk about the design approach philosophy and we know that they think about it. We even give points for user consultation. Indeed we give points for user consultation. If they organise user consultation, we give them points.

Then we talk about design integration. Everybody talks about UD constraining creativity. Is that true? It isn't. So these will be the things that we will give to you if you show that you really have innovative UD strategies, you have good aesthetic integration. So these are points. If you have 50 to 65 points you're certified UD Mark. Gold and GoldPlus is up to 80 points. More than 80 points we will consider Platinum, but at the design stage we won't give you a platinum certificate. The maximum we give you is a GoldPlus. Upon completion we'll pick those with a high GoldPlus to review. Actually every building we whether go to the site to give it, but the one we will review will be those with high GoldPlus points.

So I mentioned the developers say "I want a UD Platinum, how do I get it? I'm a businessman, I want to be sure that if I put in this amount of money, this amount of effort, I want to get it. How?" Yes, we say holistic planning and design, beyond the ticks on a checklist. The checklist can get you at maximum Gold Plus. You need to show us it is a holistic planning and design. It has appropriate provisions, user centric, more than just the minimum in the code, plus this thing called wow - wow. What is that "wow"? It has to have the extra wow, which of course may be a little unpredictable.

In 2007 we gave the awards. This is the first time we visited the building. We had this IKEA building. We all say "wow", that's the first time we see because IKEA, you know they have this family-centric philosophy. Then we go there and "wow", the whole panel was "wow". They have good signage. They even provide family facilities, even in the car park family lots. In certain cases you saw - my friend was so excited finally I get this trolley where I can fit into my wheelchair and do my shopping, I'm so happy.

Then there are other things like they even provide a prayer room for the Muslim staff or maybe some of the customers. So those were the kinds of considerations into the needs of the people, their staff. So those were the extra things that made them shine.

Then Gardens by the Bay, if you've visited Singapore you might have visited gardens by the bay. It's 101 hectares, it's really beautiful and it's something that you know - our founding father Mr Lee Kuan Yew, this is something he's most willing to spend money on, not support show really but he really believed in the green Singapore.

So the building that you see is really inclusive. Whether you're in a wheelchair, whether you are walking, you can enjoy the same thing walking up the ramp within the buildings and you have of course family-friendly features, good signage. These are the things that go in and have wow value.

Then the little story about the ITE College where their philosophy is to develop a vibrant and inspiring education environment to nurture creative learners and innovative workforce. And yes indeed when we look at the design it has reflected all that, the central spine which allows the community to go in, fully accessible, where now the community could go into this and what's so important about this?

Now, ITE, ITE stands for Institute of Technical Education and I must say the focus of technical training and most of the people who did manage - they were not so academically I would say good, they couldn't go into junior colleges, they couldn't go into the polytechnic, this would be the training. In Asian society education is very important - whether it's the Japanese, the Korean, the Chinese, they just push their children very hard because education is a means of social uplifting for themselves and their family. So when their children get into colleges with a chance to go to university it's a disappointment and their children also feel low morale, low self-esteem and when they go there - so they coined a word for themselves, ITE is Institute of Technical Education. ITE means "it's the end". But actually the Singapore Government believes that every individual is so important and every job is important. So these children, they finish school, they are 15, 16, where do you go? You need to give them this proper training. So they really spent a lot of money building not just one, a few buildings spread around Singapore to give them that good feeling that your education is important. So like they say we want the environment and this is thinking about how to make them feel good, how to really encourage them to also connect with the community, you have community shops inside, you even have collaborations with the private sector to open shops for the kids to experience. And so the principal told me "it's not the end, it's the experience that you are working to". So universal design is talking about how when you look into inclusiveness, it's every aspect.

Now I'm going to show you two fantastic private housing development condominiums. They are designed by world-renowned architects. So I'm going to illustrate the point that universal design, creative design, can co-exist and do very well. It's not that I'm giving big credit to the world-renowned architects, it's not that. It is the one common thread is they both had developers that said "I want UD Mark Platinum, I want it". And for every project in Singapore, whether you are internationally renowned, you need to partner with a local architect. So these developers really worked hard with the local architects as well as the other foreign architects, most of the time they are stationed in their own country, to create this UD environment. 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" - agreed? Never allow that.

So now I will show you another example of a refurbished building. This is called the Enabling Village. This was the existing building that they are going to convert into this whole place for a community for persons with disability, for training, for information centres and so on. Now, today you look at it, how beautiful. They just recently completed it. It's really transformed.

In the early days they joined block by block. There is a little hill - I'm an architect, I knew, when I was a student I learnt levels, then you can create interesting things, different views. But those are the levels they've created and then when somebody is in a wheelchair you find it so difficult. But today they've transformed it. You don't see anything there. It's well integrated. Then you look at the bottom picture with big slopes, trees there. The trees were retained, but the place is transformed into an amphitheatre that is accessible, but it doesn't look like you are having ramps here, ramping there. It's so nicely done, it has the appropriate safety barriers, it has the appropriate ramps, and everybody just goes there. It's for everybody whether you're a wheelchair user, whether you have difficulty, you feel comfortable, you're part of the whole environment. This is what I mean by function and aesthetic can co-exist. It's only whether you put your mind to it.

So after that I'm going to show you a few examples. This is a picture which is from one of the shopping centres in Tokyo. It's beautifully designed, it's pleasant. Then you look and you think it's a nice graphic design on the floor. Actually it's meant to be wayfinding to lead you to the escalator up. Then they have very nicely incorporated signage on the floor. We know that nowadays everybody is too busy with your iPad, iPhone and everything and you forget to look on the floor. Of course now you have Pokemon it's worse, nobody is looking. When I was walking around to the place - the park that you were saying, I saw signage on the road, oh, that's one of the ways to lead people to places. So you can be creative. The place doesn't need to look really functional, you know.

So you look at this, the toilet, the design is so nice, and then you have a tactile mat for the visually impaired, it's so nicely incorporated. These are things that I was "wow". Then when I look at the children's toilet, I'm really "wow", it's so nice. Then there's this little story that I went to Korea to give a talk at a seminar where I met the architect, I didn't know he was an architect, and he was telling this story about hey, you know you look at the toilet at the right-hand corner for kids, you have this little wall but yet it's open, why? He say "we give kids a little privacy, but yes at the same time we want to be able to see they are still there, they didn't disappear somewhere", so you give them privacy, but at the same time from afar you have surveillance, you make sure they are still around. He really had the users' needs in mind. Children also need privacy, but you want to make sure they are around, they are safe. You design things that you make sure you can keep an eye on them.

I think I'm nearly finished up on my time. I'll just give one last slide. Everybody look carefully. Most of the time we would say what happened if I am a wheelchair user, I have no place. What do we normally do? We remove one of the benches, right? But in this case you can just shift it and become part of the table or you can move it all up and it becomes a big table. This is a simple universal design concept. You don't have to make it so obvious that every time - oh, so troublesome, I need to provide for the person in a wheelchair. No, everybody is using the same thing and it's so nice, so interesting to have.

So I will end my slides with this, my thoughts. 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.

We have plenty of time for questions, so if I could ask if you have a question to raise your hand and if you feel comfortable in so doing, if you can say who you are and where you're from, which organisation, which state, territory, et cetera. Any questions for Ms Goh?

QUESTIONS

MS DEBBIE NAYLOR: I'm Debbie Naylor from CCS disability action in New Zealand. Thank you. That was the most inspiring presentation. I appreciate that very much. We have a system in New Zealand called Be Accessible where we're giving awards, but they're often to businesses that rent the property, so they want to make improvements, but obviously they can't do it in the property unless the building owner is on board and we have great difficulty getting the developers and the building owners on board, but I wanted to ask you who is on the committee that awards the different levels of awards to the building because the problem we have with our Be Accessible coding system, if you like, is that it can get a high rating for a particular user group, but the building fails rather badly on a different user group. So how you get that happy balance between the diversity of users. Thank you.

MS GOH SIAM IMM: It is quite difficult. We work out at least a checklist. One size doesn't fit all. We are continually improving. Take for example we have non-residential buildings, we will one day be developing maybe a special checklist or special group called workplace because the workplace in a commercial shopping centre is really quite different, it's a different need.

So we try to put as much in the checklist as possible. We know it's not fair always to all categories. The checklist in fact is beneficial to big buildings, which we are happy because big buildings you are having more people in.

Then I come back to the question about who, who is on the panel. In this case this has been organised by BCA, Building and Construction Authority. So my department, Universal Design Department, will be the secretariat who initiate everything and then we will form a panel and this panel will get at least one of the BCA board members to check, one of the board members, and then we will have another very senior person in. Then after that we go into different groups of people, representative - we want buy-in, we want support from the developers. We will get the group that represents the real estate, we will ask them to nominate somebody to sit on this panel. Then we will have of course academic, then after that we will look into some major developer, including it could be the public sector, it's important they buy in.

Then after that we look into the people sector, so we will always have these people representing the users. It could be people who represent people who are physically challenged, visually challenged. We'll find a representative to sit in.

Then, like I said every now and then we will also hold focus group discussion to get a better understanding of what they need. You can have the Guide Dog Association coming in

to talk to us about the difficulties they face, why people don't allow the dogs to go in, how to make sure they're allowed to go in, is there a contravention between the Muslim law. Then you check with the Surah law it's okay to go into a building, you don't have to worry. So we will clarify things like that. We clarify with the highest authority on the religious group.

We have a main group but we will always hold small little focus groups to understand more. That is from my universal design department. Then we will provide the secretarial service which we are the people doing most of the work but we are getting their consensus. And of course like all cases when you have a committee that is too big it's often too difficult to move on. So that's the reason why I was telling you about small focus groups. You cannot have everybody sit in a room. Every day you will just be arguing over things and you'll never get things done.

MR BERNIE CLIFFORD: G'day, Bernie Clifford, I've got a company called Before Compliance down in Melbourne, Victoria. One of the groups when you pop up - you know, people with disabilities, ageing, families, one of the other sort of groups are the accident and emergency personnel I think to be able to get in and out of buildings and get people with disabilities out and currently Australia falls short in their design requirements in the NCC. Is there any application that's happening in Singapore about future-proofing either the refuge of people with injuries, disabilities within a building or how to get them out?

MS GOH SIAM IMM: Emergency?

MR BERNIE CLIFFORD: Yes, emergency evacuation process.

MS GOH SIAM IMM: In Singapore the general building requirements under BCA, the Building Construction Authority. The emergency fire safety is under another organisation called the Singapore Civil Defence Force and then they have a fire department where they have law.

So often we're in constant contact with each other and so the current fire code - since 2013, because I sit on the code review committee as well - no, since earlier than 2013, five years ago was 2007, they started having provision for evacuation of persons with disabilities, so there were requirements that were already put in the fire code and they are mandatory requirements, so the area of refuge for - we call this PWD holding points, it has to be built into that.

In the past when we talk about fire evacuation, fire escape, you often say "in case of fire do not use lift", you see that very often. But things have changed. The population is ageing, people with disabilities, "in case of fire do not use lift", how do you go down? Especially in Singapore with high rise, how do you climb that down, even if you have an evacuation chair? I tried once.

So the new code does require an evacuation lift. So this evacuation lift of course priority will be given to persons with disability. There is more that needs to be done because how you manage, how you make sure - who takes care with the person with disability, who ensures that they go to the holding point, who makes sure they go down - of

course these are things that need to continually improve, but the building provision has already been built in.

It took a while for my friends with hearing impairment, they had been making noise about there's no visual alarm and for people who can hear they just don't understand. You know what happens if I'm in the toilet - I had that same when I was talking to my friends in the hearing impairment group, I was saying you see everyone around you run, you say what happens if I'm in the toilet? I don't know. So after that, after all this feedback, because I constantly talk to colleagues in the fire department to say there is this feedback, there is this fear about an alarm, what happens in a lift, what happens if you cannot talk to people. So since 2013 they have the requirement to provide a visual alarm especially in remote places like toilets. And of course we need to improve to say not just a blinking light, in certain places you may want to flash up words to say "there is a fire", you know, some instruction for people with hearing impairment who can't hear anybody.

Of course technology has improved. Nowadays people can use their phone. These are things that I'm encouraging my industry to look into new technology to help persons with disability because there's a lot of new technology, you don't have to go the conventional way, but for architects passive design is number one, it will ensure most things are right. Or in extreme cases where you need them, where you couldn't use passive design. So we should make use now of many new technologies how to improve people with visual impairment, hearing impairment and so on.

MR SIMON DARCY: Simon Darcy, University of Technology. I'm sure there's a lot of people in the room that are quite inspired by your talk this morning and thinking about planning their next trip to Singapore. And my question is from experience, got some wonderful accessibility features, great universal design, great nightclubs, all that sort of stuff, if you're in another country wanting to plan a trip is there a resource that brings together all the access information across different types of disability to allow planning for those trips to be easier?

MS GOH SIAM IMM: We can talk after this, but generally if you were to say - if say you approached our agency, they will probably tell you some other agency, related agency that you could talk to or connect with. Since BCA regulates accessibility, we saw a need and we just take upon ourselves that responsibility. You approach us, we will try our best to help you to connect with different people.

JANE BRINGOLF: Jane Bringolf, Council on the Ageing. That was indeed inspiring and we will take away quite a lot from this. I know that you've visited Australia several times and whilst I don't expect you to be familiar with everything in the way that we do things in the built environment currently, I was just wondering if you thought there was one message for us that we should take away, something that you think is really key to moving our agenda forward? For example, I just love the way you said don't let architects tell you that it stuffs up their creativity because I've always believed that designing universally is the biggest creativity challenge. But I just wondered if you had something - if we could do one thing, what would it be?

MS GOH SIAM IMM: I've visited Sydney a few times. I went to Melbourne, then two months ago I went to Brisbane, then I came to Sydney to talk to people on aged care and I

also visited your people in Standards Australia because we know Australia really is really good in developing standards and has many standards. But of course when you have standards you need to use it, how to use it.

Australia is also a country with a lot of regulations. At times some Australian friends say it could be overregulated, but I don't know because I'm not here so I'm not quite sure. But of course we have our problems, we depend on human resources, we need to be strategic when we do things. Our Government is often criticised as being a nanny state, the Government wants to meddle with everything. At times you do find that unfortunately the Government does need to take the lead. You need to be the central body. You are very big. This bigness, while you have a lot of things, but being big you do have different groups. So who unites you? You also do not want to duplicate things. You want to be more strategic. So I'm just thinking you form a centre, a Universal Design - whatever you call it - and we can have alliance with other countries, Singapore, and then we can come up with some common understanding of things and share knowledge. I think that would be wonderful because it's universal design, though I do say that we have a different cultural background, we do need to take care of each other's culture. We take care of our culture. We have four major race groups and we're surrounded by Muslim countries all around. We are always very cautious in things we do, in things we say, because we need to take care. We need peace and harmony. So we need to take care. I just mentioned about the dogs, what do I do with dogs, if Muslims don't like dogs? Will I put it in my code to say it's okay to have dogs? You have to go into the law to say no, it's okay, it's assistance dog, and therefore they have no objection. We'll talk to Muslims, we'll say your highest order says it's okay, it's acceptable. So those are things that - so who does that in Australia? To me to my mind you still need a central body to help to disseminate information, to give some lead. That's my view.

MR NICK RUSHWORTH: On behalf of the conference, I'd like to give you a gift. I hope while you're in Australia the weather holds, but in the event of torrential rain in Singapore, I have what I'm assured is a universally designed umbrella. Please thank Ms Goh.

MS GOH SIAM IMM: Thank you.