ACCESS ABILITY
TRANSCRIPT

Accessibility and the Built

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12:45 – 1:30 PM

GREG NEELEY: Thank you for coming. A lot of what I'm going to be talking about has been touched on already this morning. CNIB talked a lot about a number of things as well as Enspace.

As an introduction, I am a managing partner of FORGE media design and our firm is really focused on creating experiences in environments and branded environments in wayfinding and signage and display in a way that creates an impact and really connects with the audience and leaves a lasting impression and we do that through a number of different ways. But today I'm not here to talk about work, I'm here to talk about accessibility and the built environment. That is going to be my primary focus right now.

The reason we are here is very much to do with the Accessibility for Ontarians with Disabilities Act. And this act is very much in the spirit of the Americans with Disabilities Act. However, at this point, what the AODA says, in terms of our context, in all contexts, is to identify and break down barriers to accessibility. That's its broad picture. At the moment though, there are no specific parameters of dialogue, especially in terms of the built environments. They just released the customer service guide lines which are pretty specific and are actually going to impact all of us as companies because we provides services. But in terms of the built environment, all it really is, is to identify and break down barriers to accessibility at this point.

Now this provides a tremendous opportunity. In the US, they have very specific guidelines and very specific parameters for accessibility signage. Here, we are creating them. So as an industry and as a profession, we have a tremendous opportunity to shape what those guidelines are and to improve upon what the Americans with Disabilities Act has done and to be proactive. The one thing with regulations is, it's really easy to get something in there. Nearly impossible to get it out. So it really encourages us to get involved in this process. And help to shape this act so it makes sense and that it works. But it also conforms to best practices.

So what are the key principles of the AODA. It's really about dignity, independence, equal opportunity and integration. It's about providing, in our context, environments that allow people equally to experience the environment, gives them the dignity to use the space or interact with the environment or visit, whether it is a hospital or an airport, gives them the dignity to interact with the space with independence. That it provides opportunity that people can get the information that they need to understand the environment independently and to integrate. We don't want to try to create two tiers of everything. I mean, in a lot of cases, there are situations where the only way to make it optimized for both able bodied and disabled is that sometimes we have to have certain redundancies. But those are the real principles. So it really comes down to universal design. And universal design is a goal, it's an almost unachievable goal, but it's an important goal to strive to.

The question is who are we designing for? And I have some very interesting statistics to start off with. First of all, everybody knows about our aging population. Now, from 1956 to 2016, something very interesting is happening. The top bar is the number of the population age 15 and younger. The lower bar is age 65 and older. Next year, it's going to cross. We're going to have more people 65 years and older then we have 15 years and younger. And I'm sure you can imagine what impact that is going to have.

Now, 43 of those 65 and older aged, 43.4% report disabilities. So as our percentage of the population rises, almost half that population reports that they are having disabilities according to census 2006. If we take that back to the overall population, we now have 14.3% of right now 4.4 million Canadians reported with disabilities. That's pretty much the population of Toronto, which is quite a significant statistic. So we are designing for a huge audience. The widest possible range of ability circumstance we are dealing with beyond typically identified disabilities (low vision, physical disabilities) but we are also dealing with languages, cultures, ages, different elements of impaired body-ableness.

On the language side, by 2017, 21 – 25% of Canadians will not have English or French as their first language. So if you think about all of these factors, they have a huge impact on what we are doing.

So, here are some examples of what happens when language goes wrong in other countries. I'm sure you have an idea of what's that suppose to say. These are the simple translations. So we can only imagine what happens (simple way finding in the airport) we can only imagine what can be happen on the other side of the equation with people here. And arrows are not going to save you. Or symbols.

So what can we do to break these barriers? First of all, how many people here work in the wayfinding industry or wayfinding signage, environmental graphic designers? Okay, a few.

AUDIENCE MEMBER: Not enough!

GREG NEELY: Yeah, that's an important sentiment. Well, in itself, good wayfinding bridges barriers of accessibilities. A well-designed environment, in itself, breaks down barriers and creates opportunities for people to use the space and interact with an environment in an effective way. Now the other thing that I'd like to say is there are many tools for wayfinding. I'm not going to get into the whole discussion on wayfinding theories itself but the key thing that I want

to say is wayfinding is about helping people create a cognitive map with their environment. Help people understand the space, spatial orientation. It's not just about telling them to turn left or right, it's helping them understand the environment as a whole and most importantly, not even so much understanding where they are going, but where they are now in relationship to where they are going. That cognitive map. And there is many ways we can do this. There are many tools we have. We have architecture. The architecture is the impact, and as time goes on, architecture recognizing that more and more. There are landmarks, lighting, textures, colours, finishes. The physical environment has a massive impact on brea-king down these barriers in terms of environment in wayfinding. And last but not least, but remember it's only one element, is signage. I'm really going be talking about signage today as one element, but I want to drive home the fact that signage is just one piece of that puzzle. If you rely just on signage, you'll have a lot more challenges making it work and you have a lot more risk of getting into confusion over signing all the things that happen where signage is not successful. The other thing that has happened over the last number of years that's created a lot of new opportunities is technology and I'll talk a little bit more about that later. But technology offers tremendous opportunities to bridge these barriers of language, culture, accessibility, vision, hearing, the whole gamut; simply because we can control the contents and the contents can be customized to the user.

So, let's start in terms of looking at some best practices. Let's come back to signage for a minute. And before I go further, I have to again come back to ADAAG. ADAAG is an extremely influential piece of legislation out of the U.S. that was an extension to the civil rights code in 1990, that is an extremely comprehensive accessibility guideline. They have spent a lot of time developing very specific standards. Now one can argue whether all of these standards make a 100 per cent sense or not. This is again another opportunity we have, is to look at ADAAG and built on it, improve on it, maybe

make some adjustments and make a little more sense. The one thing about ADAAG is it is a regulation. There are many states in the U.S., where if you have inspection and if you do not meet the requirements according to ADAAG, according to the inspector, you do not get occupancy. It's similar to the Ontario Building Code that way. So it has some very, very tight parameters that are very strictly enforced. And I would also like to, also have to give SEGD (Society for Environmental Graphic Design) some credit because ADAAG to read it, is a very confusing document. SEGD has spent a lot of time interpreting that and issuing bulletins and translating it into language the designers can use and understand. And what I am going to talk about today is very much based on a lot of the best practices of ADAAG.

So first, let's talk about recommended viewing distance. How big does the text need to be to be seen? There is a standard guideline in terms of distance to size. But, from an accessibility point of view, what we are looking at as a best practice is 25 mm of text height to 7.5 m of viewing distance. And you can take that all the way up as the text gets larger, the viewing distance gets larger. That gives you a basic guideline and if you want to translate that into American, it's one inch for 25 feet, so that's a good starting point. By the way, if you have any questions throughout this, we don't need to wait until the end. Please interject, I will answer as best as I can.

AUDIENCE MEMBER: Excuse me, how do you measure text size?

GREG NEELY: By cap height. Thank you I should have clarified that.

AUDIENCE MEMBER: What's SEGD?

GREG NEELY: It's Society for Environmental Graphic Design. It is an extremely important organization based in the United States. There are members here of course, I'm a member, and other people in my firm are a member and there are other firms here that are members. In fact, the president of it is sitting right there. But it's an organization

in the United States that is for this profession of wayfinding and environmental graphic design. And they do a lot of great work and are a huge resource for learning and knowledge. So I encourage you to look into SEGD.

Alright so, next we'll move onto mounting heights. Mounting height consistency is extremely important and I'll get to that in a little bit. But your magic number, especially the one on the left, your wall mounted sign, 1524. Translation: 60 inches. Centered at 60 inches. It has been found to be, through a number of studies and it is the standard that is supplied by ADAAG, to be the comfortable viewing height for the greatest range people. Basically at 5 foot, centered at 5-foot. Now there is obviously some flexibility there because depending on how you are aligning sign elements down a hallway; if you have different sizes of signs you may want to adjust that along the way. But as a guidepost: 60 inches centered.

The height for suspended signs has a little bit more to it than that. The minimum recommended is 80 inches. From my point of view, 80 inches is very low, but you certainly want to go lower than 80 inches. But, it comes back to viewing distance and your text size. Your text size on your suspended sign is going to be very much governed by your viewing distance. Now here is a rule that ADAAG has, which I don't personally agree with and I know I am not alone on this, they say that suspended signs must have three-inch text, which is 75 mm text, which is huge. And generally the viewing distances you are dealing with, with those signs, do not warrant that. So there is a difference between a regulation and best practices and how we can work in some flexibility. So 2032, translation 80 inches. 1524, translation 60 inches. For your standard mounting heights.

Now this is what I want to touch on. Consistency of placement is absolutely crucial. Especially when we get into, and we're going to talk about this more in a minute, when we get into room numbering. For people with low vision, this is how people find their way around

a space. From my point of view, I would argue that room numbering and consistent placement is the single most important piece of accessibility in terms of signage. What room numbering does is that it provides a predictable, consistent, repetitive series of information for people with low vision or no vision through Braille and tactile, that they can find their way through a space. Now how you do the room numbering is extremely important and this comes back to something that was said earlier today about street-based room numbering. Street based room numbering is very effective but one of the things you need to do is you need to divide the facility into, essentially, a grid so you can create a series of natural pathways in terms that make sense on a street base. So you divide the facility down to a devisable unit and then you apply that through the facility and that gives you flexibility in terms of adding rooms and moving rooms. And that way, when room's change, grow, shrink, programs change in a facility, you're not having to re-room number everything, which then causes confusion for people starting to learn your space through room numbers.

I've kind of jumped ahead a little bit here. Now just coming back to room numbering itself. In terms of the accessible components of signage in a facility, your room number signs and your washroom signs is really what is key, especially in terms of Braille and tactile. Your room signs are made up of two elements. Now when I say changeable I don't necessarily mean that it has to be a paper insert. But the key element is your room number. Your room number is the code to where that room is in the facility for somebody who is searching for it. So for instance, if you have somebody with extremely low vision or blindness you can send them to Room 219. You direct them to the right area and then as they are finding their way, they can find their way through touch, through consistent spacing – because the biggest challenge with signage and blind people is, where is the sign? So if we create facilities that have signs that have predictable space, which is typically 3 inches from the

doorsill, left side, 60 inches center. If is always there then they know where to find the sign and going down the hall to 215, 217, 219. It is a case of sequencing.

Yes?

AUDIENCE MEMBER: I work for a large educational institution and occasionally when we have add-ins, in regard to renovations, some of the rooms are not able to be signed on the left side. So, how would you correct that?

GREG NEELY: Actually I got a little story on that one. ADA and just in terms of common sense for Braille, says that signs should not be placed on the door, they should be placed beside the door. The problem with the sign on the door is if the door is open, there is no sign. Therefore, we lose that important piece of information. Now there are realities in an environment where you have a door and there literally is no space beside it, and in which case, you have to place it on the door. The curious thing though is, they recently changed the building code in Ontario. The building code used to say for fire egress signs and other very important pieces of signage in a facility. With fire egress signs it used to say that it was placed on either side of the door and no further than this from the door-sill. However they've changed it. They said it has to be on the door now. We recently had a situation where an entire building had to be changed. However, the interesting thing is that I had an argument with them. I said, "You put this sign on the door, the sign no longer meets accessibility standards. It no longer functions in that aspect." Their answer was, "We don't care, OBC trumps accessibility." So there is another example where our involvement in the process is really important because there is a problem. We have buildings now that are going up, that I can tell you will not meet with signage being required by the Ontario Building Code, that are going to have issues with some of the accessibility goals that we are trying to achieve with the AODA.

Just to touch on (I don't have a slide for it) but just to touch on fire egress stairs. The other thing that is very important with fire egress stairs and it's both accessibility, and I guess I'm slipping into general signage, is that fire egress stairs don't have a picture of a stair anymore. All they say is what level and what stair and the stair has to be eleven. And the fire egress stair maps are more for the firemen than anything else and what they do is create a three dimensional grid in the building. So if a fireman is at any fire egress door, they know, I'm at this stair and I'm on this level. And that's what it's primarily functioned for. And it is also to be Braille or tactile because again you are dealing, even with people with sight, you are dealing with potentially low vision situations. So just coming back to here, what I want to emphasize is that the room number is the most important; it is the permanent part of the sign. It is the part that should be Braille; it should be tactile. The message does not have to be. The message is your changeable. That room may change what the function of that room is but that room number should be permanent and that room number should be 16 mm or five-eighths as a minimal size.

So moving along, let's talk about Braille for a minute, which they also talked about earlier today. I'm going to disagree with the final word on the whole grade one, grade two but that's okay.

AUDIENCE MEMBER: Can I ask you a question about the height, the mounting height? With reference to the permanent part of the sign that is tactile Braille. I understand by putting 1525 or five feet in the height for visual because of where our eyesight is, but if someone who is totally blind and is feeling along the wall, would it not be inconvenient to stand with your hand up, especially with one holding a dog or a cane, your other hand is almost at your eye level?

GREG NEELY: Have you noticed how they have done the Braille in this building?

AUDIENCE MEMBER: I think it's lower than five feet.

GREG NEELY: I'd have to measure it. But what I wanted to point out about the Braille in this building is how people read Braille. If you are doing a building that is like this, that is by definition an accessible building. This is not something that is typically done in your average office or hospital building, even. But Braille, if you notice, the Braille is on a 45 degree angle. This is the comfort level for reading brail.

AUDIENCE MEMBER: So it's not up here?

GREG NEELY: No.

AUDIENCE MEMBER: But you just said the standard mounting height is at five feet.

GREG NEELY: It is 60 inches, yes. As a standard guideline and these 60 inches is roughly about here. So there is a comfort level but I am saying if you really wanted to design Braille for Braille readers, that's why they do it at the 45 because that's your comfort level. And just backing up one step, the tactile part, I should have touched on this earlier – there are two types of blind. There are people who are born blind and people who have become blind. The people born blind read Braille and the people who become blind read tactile. That's why it is generally recommended on both. And I think they did mention that earlier.

AUDIENCE MEMBER: I'm sorry what do you mean read tactile?

GREG NEELY: Raised text. The standard is thirty-secs of an inch off the raised, which, I mean there are lots of ways to do that. One way would be a product called Romark. Romark is essentially a thick vinyl it's thirty-secs of an inch thick. I don't have the exact metric dimension for that, sorry.

AUDIENCE MEMBER: Point eight of a millimeter.

GREG NEELY: Thank-you (laughing).

So lets talk about Braille for a minute. When we're applying Braille,

we need to keep clearances (because it is Braille and tactile) for that. Our clearances are 10 mm; we want to keep 10 mm between the tactile number and any other element. I'm just showing bars here, it could be anything. And Braille doesn't have to be, it could be beside too, a lot of times Braille is beside. The point is that we keep the 10 mm clearances between each of the elements. The other important thing about Braille when you are designing signage is Braille, to be correct, needs to be round top. There's a lot of Braille out there that is flat, that is done through a reduction process, like photopolymer. Now before any further, photopolymer have developed a way to get a round top. There's a process they do after that gives it a way to get a round top. But it really, the best type of Braille in terms of function that we found, is bead insertion. And now I'm getting technical, but the actual bead is inserted into the material and that gives you a really nice round top. But you don't want a flat top with sharp edges, it's harder to read. And ADAAG, as they said earlier, strongly recommends grade two Braille. Based on the fact, with signage and wayfinding, you want to keep you're message simple and succinct. Grade two is what makes sense. And I think grade two, hopefully is what's going to be pushed in the AODA. I can't say for sure, but grade two is the condensed version and is what's used across the United Sates very effectively and it's what we always spec. And I think, mostly, many designers spec as a rule round top grade two Braille.

All right lets talk about text for a minute and messaging. In print, we have a lot more flexibility with our tracking and they talked about this earlier. Oh sorry, I'm jumping ahead, I'm actually on the wrong one. This is the one I want to be talking about: upper and lower case. There is a lot of signage that is done all upper case. A lot of people do all upper case as a default when they are dealing with signage and it has its place. If you want to create emphasis, head-lines, things like that. But if you really want to communicate a message or have detailed information especially things like

directional signs, things like that, the upper and lower is much more effective. The reason is, and they touched on this earlier, is it creates a much more defined form, recognizable form. The above is simply a horizontal block. This becomes the recognizable form, shape, and becomes more distinctive shape.

Next thing I want to talk about is tracking. In print, you can have things a lot tighter. Remember in signage we also have the three-dimension aspect to it, which visually you never see a sign straight on, visually it always fills it in. But as a general rule, you want to track out ten to twenty per cent more than you would on a standard text. And that's just also good signage of wayfinding standards, as well as it helps accessibility. You also notice something about this: the lower word looks bigger. It's the same size. It's exactly the same size. So you can see the impact of that.

The next thing is font weight. Again, the difference between print and signage: wide can work, tends to be a little light, medium tends to be the most effective and again I'm not going to sit and telling you to use this font or that font, or this weight or that weight. It's all a judgment call. But these, I want you to bring to some considerations and best practices thing is to think about when you are dealing with it. When you start to get clients say "I want bold, I want to see it, I want it to look bolder because I can't see it clearly", the problem is as you go really bold, if you squint your eyes, it starts to fill in, especially when you start to add three-dimensionality to it. So you want to be careful about your weight, in terms of fonts.

70 per cent: they talked about this earlier, about 70 cent value, in terms of contrast. Contrast is extremely important obviously in signage. It's where a lot of signage, unfortunately, ends up failing in that it cannot be seen yet for the... oh, I think I'm out of power. I hope you can still hear me. You obviously need enough contrast to be able to see your message. The audience at the given distance, in the given lighting conditions, can read and absorb the mes-

sage. In signage and built environment, when we're dealing with 70 per cent, it's not so much about the difference of value between 30 per cent grey and 100 per cent black. It's about Light reflectance value contrast. Light reflectance value (LVR) is the amount of light that comes off in given colour, in reflection. And when you are specifying signage in colours, you are not specifying Pantone colours. Well, sometimes you do to match, but really at the end of the day, you're specifying paint. And every paint colour has LRV. And what's important is the background to foreground meets a 70 per cent contrast level in LRV, and there is a formula for that. You take your first colour, subtract your second colour, overall divided by the first colour, times 100. Now these Bs represent the LRV that is supplied by the paint manufacturer. So, it's not as simple as well that's this value and that's that value, I got my LRV contrast. Again, I come back to this is a guideline. There are always exceptions and you have to make a judgment call, but it's a good place to start. If you go through this process and you end up in something in the 40 range, obviously you are not there. The other aspect to this that affects the LRV, is how glossy or matte the surface is. Again, they talked about this earlier, for accessibility you want a more matte surface than glossy. Glossy surface creates reflections and it often obscures the message. It also has, can have, very negative impact on this. So generally you want matte or eggshell and then again, this come backs to what ADAAG recommends.

AUDIENCE MEMBER: What if you have a two-colour background?

GREG NEELY: It's the contrast between the message and whatever background is behind it that allows you to see the message. And again, this isn't to say that you can only ever design a matte sign. It's really a case of looking at prioritizing where the core message is, where that key message – for instance the room number, the washroom picto, where that has to be communicated in a way that meets accessibility goals. But it doesn't mean that your entire sign and your entire design have to be within those parameters. It's just

how you deliver the core message.

AUDIENCE MEMBER: You talked about colours.

GREG NEELY: Yes.

AUDIENCE MEMBER: Which are the most acceptable colours in signage for accessible –

GREG NEELY: There isn't. It's really not anything that defines it. It really comes down to the contrast between your background and your foreground. There are probably some colours that won't work very well, like blue and orange, yellow and purple, red and green. But you might be able to find the right version of those that could actually work.

Oh, great. Bear with me a second (changing mic batteries). I'm being recharged.

Okay, so it comes down to the contrast, it comes down to the materials and again it's a judgment call. And this is what the whole discussion is about. Because we don't have any specific guidelines, part of the challenge is that we are doing work right now that's going to be expected to meet the guidelines that haven't been written yet. So we might as well make the effort to use what we do have, the resource like ADAAG and best practices, to try to work in as much as we can, so that we're much closer if not there by the time our regulations do come true.

Pictograms. Pictograms are a bit of double-edged sword. Many clients, some clients I should say, feel that pictograms are the answer to all of your communication challenges. We don't need messages, we don't need languages, we'll just use pictograms. Pictograms can work. However, there are challenges with them. Now when you are using pictograms, typically you are using them for washrooms or you are using them for elevators, the international symbol accessibility, everybody knows that. As a guideline, when

you are using the pictograms, if this was sign, you want your field to be 152 mm height, roughly about 6 inches. That usually makes your pictogram anywhere five to six inches high. It is generally a good practice to make your pictogram tactile. It's not a requirement, even in ADA it's not a requirement but generally it's a good practice to make your pictogram tactile. It provides another element that can be recognized through touch because we are dealing with huge range of population that absorb information in different ways.

AUDIENCE MEMBER: Before we move on, you mentioned that that's sort of a **–** did you say that's an international pictogram? There are different styles –

GREG NEELY: There are different versions of it. But the wheel chair, it is widely recognized. If you see this symbol, you know exactly what it means and I think that's probably, reasonably cross-cultural. I would not go out on a limb and say it is absolutely universal.

AUDIECE MEMBER: I see. We came across, at the City of Toronto, we came across the fact that we were using, throughout the city, different styles. There might be a little foot, there might not be a foot, that kind of thing. I was wondering if there was a more standard wheelchair symbol that is used.

GREG NEELY: Not really. I mean, that is the power of pictograms. They are symbols that communicate in a much larger fashion than what they present and even if they shift a little, there are still recognizable, understandable and communicate an idea immediately. And they very often cross language.

Just moving forward. Everyone knows what that picto is. The standard washroom picto. Everybody knows what these are. The problem is pictos can start to get a little ambiguous and it depends on the context. We have a picto like that. What does that mean? It could be a few different things. It could get even more ambiguous. What about that one? Depending on the context, it can mean different

things. The next few pictos that I'm going to show you are absolutely real pictos that are used and are out there.

This is a dental clinic. Now start to think about when we are designing pictos, in our context, our understanding, our North American viewpoint, or if we're from whatever country you're from. We have to be careful that we don't make too many assumptions in terms of what symbols are going to mean to people. Let's look at another one.

That's an international clothing line, out of Italy, called A style. Now they did this on purpose. They actually did this in purpose.

The next one is from a Norwegian tour bus. Tell me what that means. And honest, these are absolutely real pictos and I'm not making this up. They are used. This is on a Norwegian tour bus.

Then we get to Japan. Now I can tell what that actually means. I'm sure your imagination is saying something different. That means that this seating is reserved for people with broken arms, babies, pregnant or injured legs. So again, this is very important to think about when the idea that pictos will communicate across the board. In Japan, I'm sure it makes perfect sense. I don't think they would use it, this is on a major subway train.

The next thing I'm going to show you isn't really a picto, it's a symbol and I was so floored when I saw this, I couldn't even believe it was real. That is the logo of 2012 Olympics. That's somebody trying to use a symbol and failing miserably. Believe it or not, that's real. So, I'll just leave you with that for a second. No, that's not the Kindergarten class. When I was going through pictos, I came across with this. I had to show you. It's not quite on topic but I just had to show you this. That's what's going to be all over London in 2012. Oh, I didn't tell you how much that was from the branding consultants. £400,000. £400,000 to develop that. Now obviously I'm from the design industry and we know that you get these sensational statements that people, "You spent how much for a logo?" And we all

know what it goes through to develop a brand. All of the research and all the efforts and exploration and all of the applications. So I'm not sitting here saying you know, that aspect, but the amazing thing is that they went through all that effort and came up with that.

So now I want to talk about technology. Technology offers huge opportunities to help bridge some of these barriers. Things we can do now that even five years ago would have been much, much harder. What technology offers is the ability to offer a personal experience, in terms of messaging in an environment. To actually customize, at some level, the person's experience in the environment to them, in different levels of parameters.

I'm just showing some of the technology pieces that we are working on. What that does is it, in terms of culture, in terms of language, in terms of points of interest, we can use technology in a way that through, for instance, through RFID tags, where you identify someone with certain options and things that they want. They want a specific language, specific interests, we can also use audio technology. So there's a lot of different ways that we can make signage responsive to the user rather than just passive. It doesn't just have to sit on the wall. And this is what our focus is for the Canadian Museum for Human Rights. And why I wanted to specifically mention that in this context is the Canadian Museum for Human Rights is a remarkable, I'm not sure how many people are familiar with it, but it's an incredible piece of architecture that is being built in Winnipeg. And this facility, the entire purpose of this facility is to be as accessible as possible. There are no stairs, it's all ramps, architecturally it's an incredible feat designed by Antoine Predock. It will probably be Canada's closest thing to Bilabo in Spain, it's that kind of level of architecture. But the whole concept of this facility is that, it is in terms of universal design, it's accessible to any language, any culture. People from around the world can come to this museum. This museum is more about what's going on now, than what's going on in the past. You can come to this museum and experience it. And the concept for

the wayfinding in this museum is to create that personal experience through technology. And using technology and creating series of information nodes and a point where you can customize your experience using ID tagging and you can have the wayfinding, depending on where you are in the facility, that can respond to you in your language of choice. It can have sound elements. There is sound technology where when you touch something, you hear it. So there are all of these opportunities in this very early stage, but the reason I want to touch on it is, this project creates a tremendous opportunity to really make strides forward in bridging those barriers using technology. Low vision, low site, hearing, language, culture, age; the audience for this facility is incredibly wide, and that's what our challenge was.

AUDIENCE MEMBER: Excuse-me. What was that RFI tagging?

GREG NEELY: RFID tagging. It's essentially a chip that is key to you. So when you are interacting, for instance, if you are to go to a large touch screen, the touch screen will communicate with your RFID tag, knowing it's you, and you is just simply an identifiable piece of information. It's not necessarily **–** it just means that whatever you are selecting right now, it's going to be referenced later, as a unique element, if that makes sense. So you can choose, for instance, you can choose your points of interest, you can choose your choice of language, you can choose a whole range of things in terms of options, but from then on, as each system reads your RFID tag, it accesses the same information so then you start to create a personal experience.

AUDIENCE MEMBER: So it that like the TIVO idea, in a way?

GREG NEELY: A little, yeah.

I know I just have a couple of minutes so just to sum up everything, I just wanted to touch on again some key best practices and considerations. But it comes down to, for accessibility, you want to use

architecture and landmarks as much as possible to provide spatial orientation cross-culturally and cross-linguistically. You don't have to rely on just signs. You can use distinct tactile elements as well, in an environment – treat different floor and wall finishes – that create differentiations. You can use lighting. And that, in conjunction with consistently placed signage can be extremely effective to help people understand the environment. You can employ digital technologies that have the content customized to the user. This is still early. There are a lot of things you can do right now, there is so much more we will be able to do in the future. And the other thing I'd to mention is, organizations like the CNIB, it's really important that you take opportunities to work with them. And they can provide a lot of advice and consulting. In fact, Wayne is going to talk about this later, of Entro's work with the CNIB on the airport that was tremendously helpful. So, it really comes down to common sense, innovation and creativity to look for the ways that broaden the reach of your design.

Thank you.