



Designing Signage for Universal Accessibility: Working with the CNIB on Pearson's Terminal 1

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WAYNE MCCUTCHEON: Thanks everybody. My presentation is a bookend of where we started with the CNIB at the beginning of the day. I am presenting this project, which we finished a few years ago, because we worked very closely with the CNIB. In fact the CNIB, was brought in as a part of the design team, and as a partner on the project from an accessibility standpoint. There are some slides in here that I'll go through very quickly to give you a grander scope of the project and the considerations we had on the project and some of the key principles. For this project, our office worked in partnership with Pentagram out of New York. We certainly wanted to do something very comprehensive, clear, ensure people were choosing their routes with confidence, and not overload the amount of visual information in the airport. We wanted to use standardized terms, and very specific orientation, ensuring that as you came to a decision point that it was clear what you needed to do and there was a real consistency to that. The program needed to be user friendly and deal with the infrequent traveler.

The team recognized the challenges of the visually impaired, and we approached Leslie MacDonald of the CNIB about collaborating on this work. The Greater Toronto Airports Authority, who was our client on this, told us this story at one of our earlier presentations about the accessibility challenges at the airport. When terminal

three opened in the early nineties, it was the new flagship terminal for the airport. One of the significant news articles at the time of opening, was about how the signage did not provide an adequate level of accessibility. People couldn't find their way around, they couldn't read the signs which was a significant failure of the building. For the new terminal, the Airport was very concerned about this past and wanted to ensure that we integrated the input, early into the design process.

The other thing that came out as we were moving through the design process, that we wanted to use colour-coded information. It was an idea that started in Europe, where yellow is for departures and green is for arrivals and white is for services. Providing the ability of sorting information by colour.

We wanted to make sure from an accessibility perspective it accommodated people with English as a second language. We also needed to comply with the Canada Language Act, which requires equal weighting between English and French. Early on as we started looking around at airports from all over the world. When we looked at these, we said, 'God, this sign is really boring.' You know it would meet the CNIB requirement of Arial and white text on a dark background, but we said, 'that is so bloody dull.'

We looked at other airports around and then we looked at these things about great colour coding. You know, look all those pictograms, nobody knows what half of them mean. It's funny, I always ask people, you know this one here, does anybody know, you know that on in the upper right hand corner?

AUDIENCE MEMBER: It's the post office

WAYNE: Post office! That's right, I don't know how you know that.

AUDIENCE MEMBER: You have to live in Germany for a while.

WAYNE: Yeah, that's right. That's what it is.

So we said using pictograms on their own, wasn't the solution either. So, the whole idea of the yellow, green and white and just the way that was used in some of the Port Authority airports in New York and some airports in Europe. So we looked at a lot of different airports and then we also looked at pictograms. Is there really an international pictogram standard? What do we know about pictograms? What pictograms worked? What pictograms work from an accessibility perspective? And looking at quite a wide range, we reviewed a lot of the pictogram testing, to really assess, what was the best pictogram series to utilize.

We also had to go through a very rigorous planning system, and understanding things like, where are we going to use colour? Where are we going to use pictograms? Where are we going to use letters? We didn't want this thing that was like, 'I parked on the yellow level of the parking garage with the stars, and then I went in that entrance that was the green entrance with the triangles and I went in that purple check-in area.' We wanted to have a real strategy and logic for where we used colours, where we used pictograms and where we used words and so on. So we really thought about the project very holistically from all those perspectives. Right from the time you got on the highway to approach the airport to the time you got on the plane. And what are those different elements and how do we use those elements? So that's kind of what's across the top of the graph, what are the elements and what are the things we need to identify and how do we do that?

We needed to even look at things like the numbering of gates, how do we number gates so that we have a really intuitive system? And there were a couple of speakers that spoke earlier today about as I move down a hallway, how do I make sure the numbers progress as I move down that hallway? Same sort of thing for an airport; how do we make sure that that's really understandable, really intuitive? Because that's really a universal design principle, it's got to work for absolutely everybody. And we'd have things like this and someone

would say, 'yeah, but it's not that intuitive for the pilot.' Right, well hopefully the pilots have a guide or something that shows where to find the gate. We really tried to focus here, this is about customer service. This about the traveling public, it's not about operations. Let's solve operational issues another way. But let's look at universal design principles for our public and for traveling customers. And we looked at all the things related to typeface and colour and contrast and lighting, how do we ensure readability? People have talked about this earlier but looking at things like text height to distance. We went through the airport and looked at every single sign we'd placed in the plans when we were designing it. Are we sure that when we stand at this sign, can we see the next sign? Can we see the next point where we need to make a decision? And ensuring the text is large enough. And we basically followed the American Disabilities Act Guidelines for that in ensuring that we were meeting that criteria.

Then, early in the design stage we went through these series of mock-ups. We created these mock-ups - this is one of the designers from our team holding this foam core model up - and then we'd review these with the CNIB. Let's see what they think. And we had this really cool idea - let's make the arrows up out of dots, cause that kind of fit in with some things we had in the building and the CNIB said, 'you know the dots, we're not really buying it for the arrows.' But we didn't want to give up on the dots on how we used them in other areas of the terminal. So we said, 'let's work with this.' We're not using Helvetica as our typeface, you know this isn't Helvetica Medium that's like two feet high. Let's do something a little bit unique, but can we do that? Can we add some flavour, add some flare, give Toronto Airport some unique identity but still satisfy the needs of the visually impaired? And bring in the CNIB as a partner to do that? So we built mock-ups of a wide variety of signs at each stage of the design, constantly engaging CNIB. We started from paper mock ups, we then went on to build physical mock ups

and actual signs out of real materials. Looking at different shapes for the dots and looking at different colours and we wanted to use this idea of yellow for departures and green for arrivals. How do we do that and still achieve the contrast ratio that we need to satisfy the visually impaired? Looking at different weights for the typeface. The typeface was roughly based on Interstate. We studied many different weights for the typeface and mounting heights to signs.

And then from there, we actually built a mock-up of an entire section of the airport. We took this hangar at the airport - one of the hangars in the in-field, and created a complete series of signs to study everything from different design configurations, to how we make up numbers out of dots. I'll show you some images of the actual signs in a couple of minutes so that you can relate this. We then brought in CNIB volunteers. We had about 150 volunteers that came through on a two-day experience. And as a designer, it is the most humbling experience you would ever have, I swear to god. We went into this exercise, and we had things where we'd say 'oh we've got this one that's 80% grey, this one's 85% and this one's 75%,' and we'd ask, 'so guys, which one looks best?' And we thought it was really cool right? And they would respond 'we can't read any of them.' We thought it was really smart that we were studying these five-degree increments and in reality they couldn't read any of them. And just spending time with the clients of CNIB and taking them around and really first-hand experiencing these things was just an amazing experience and it's an experience we'd like to have a lot more on projects. And you realize these things and it's just a very eye-opening experience and how do you look at these things. And we looked at - and there's Leslie Macdonald there, that's a photo from a couple years ago - electronic displays and how do those work for the visually impaired? Really studying that first-hand and making corrections to the designs based on the knowledge gained. And then we actually took those elements into the building ourselves and looked at, how does it feel in the building? These

were the signs that we ended up testing and modifying and getting approved, but then how do they feel in the building? And in fact we made the signs bigger in the building because they felt too small. It wasn't done for a reason of readability, it is just that architecturally the signs felt a bit small. So we made them about fifteen per cent larger, really as an architectural gesture more than anything. We studied electronic displays and what do they look like in the environment, in the real lighting conditions? And did a whole series of mockups of all sorts of different technologies for displays and ensuring that we met our criteria.

The other thing that we studied was the graphics in the elevator cabs. Here's an image from a standard elevator at Yonge and Dundas Square. You know these buttons here are for the TTC, right? And the rest of the buttons are for the parking garage. And this number 'one' is the same as the 'ground' up here. There are two different systems and I don't quite understand why these systems could not be better coordinated. However one of the accessibility considerations is, you see this black graphic plaque that has the 'G' on it next to the elevator button? Somebody that was visually impaired would actually push the black plaque, because they think it is the button, since it carries the 'G' and it has the best contrast. The problem is with the buttons at the bottom of the panel that have tactile messages directly on the button. If somebody was touching it to feel the button they could push the button accidentally. With this design there is significant conflict between the sighted and the blind. How could we come up with a universal design principle that would work for both those people? It's a real challenge. For the airport we developed a unique solution. What we developed was one system for the sighted, which the floor number is highly visible, and applied directly to the elevator button. However for blind or very low vision users, there is a tactile floor number and Braille that is applied to the stainless steel panel next to the button. So it was a way to try and combine a system that worked as a universal application.

I thought I'd try to wrap up a bit early, I'll show you guys some photos of the finished project. I guess a lot of you have probably traveled through the airport, but this is the end result of the project. We worked on this for about eleven years now, did every element throughout the program including information displays, directional signs, all the electronic displays, the Air Canada branding and so on. Public art was also a big component of the project, and ensuring that public art also was strategically placed for key wayfinding positions to ensure orientation and landmarks as we move throughout.

That's it. Thank you very much.