# TECHNOLOGY
# SOLUTIONS
# FOR THE
# AODA

**Case Study:**

IDRC (Inclusive Design Research Centre)

OCAD University

# OCAD & IDRC See Benefits of Choosing the Right Technology Advisor

Founded in 1867, OCAD University is the "University of Imagination", dedicated to art and design education, practice, research, and invention across a wide range of disciplines. Through a partnership, the The Inclusive Design Research Center (IDRC) was created as Canada's first research hub focused on digital inclusion. It is adding new approaches to learning that champion cross-disciplinary practice, collaboration and the integration of emerging technologies.  An inclusive environment accepts, utilizes, accommodates and appreciates the talents, skills, abilities, perspectives and leadership styles of all employees and clients, including all aspects of their diversity.  Inclusive design is about unlocking and allowing participation for all users. The IDRC works to create solutions for those who need them most by increasing opportunity and making a real difference in people's lives. They turned to ET Group to create inclusively designed technological capable rooms, that would further their research while being in accordance with their culture and their values.
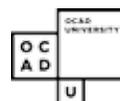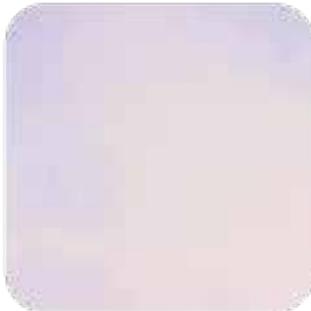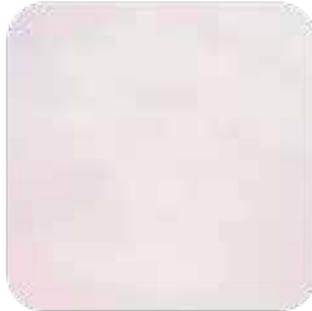
**Location**
Toronto, Canada

**Industry**
Higher Education

**Application**
Learning
Inclusive Design

## A New Challenge

"The work of the IDRC is about making Inclusive Design a global event, and these solutions allow us to be more global, in a more synchronous way, than some of the other tools we were using," said Jess Mitchell, while explaining that the university needed a system that was flexible and easy to use without being obtrusive. However, technology isn't normally inclusively manufactured. The virtually collaborative research and work at the IDRC had been previously done through a mix of technological tools, which made things difficult. The tools were lacking in one way or another and contradicted their inclusive philosophy. The challenge was to design a technological solution that could adapt to their prefered environment, and that could respond to their high level unique needs. Both the ETG's engineers, project managers, and IDRC's designers worked collaboratively to maximize impact and create true innovation and digital transformation.

## A Process of Discovery

"ETG was willing to learn with us, to collaborate with us, and to be flexible, and that's part of the reason why we chose them to work with," says Jess Mitchell. Multiple workshops were held with both ETG representatives and IDRC members in order to discover and understand both worlds. Some of the IDRC members were invited to ET Group's offices, in order to see and understand how the available technology worked, and explore possibilities together.

"When we got to analyze and manipulate together the available technologies, the whole project made a 360 degree change, since we

"We wanted a system that would reflect our research, which shows that everybody learns **differently**."

- **Jess Mitchell,** Senior Manager Research + Design

both finally understood what we wanted and how we wanted it," recalls Jonathon Drennan, Design & Programming Manager at ET Group, who showcased the technology and available features to the IDRC. A custom solution was collaboratively developed that would help to shape inclusive design and technology in Canada.

"Over the years, we have both come to know much better who we are. Whenever we had a communication issue or a technological issue, we had a way to come back to a productive way to solve things. And this is what matters. It is about the relationship and having a group willing to work with us, to understand with us,

a team that takes the time and solves things with us," says Jess Mitchell, talking about the different challenges they met with ET Group. These challenges were really different from what the company had dealt with over the past 40 years, and overcoming them required a lot of empathy and collaboration.

"Overcoming those challenges created a strong and lasting relationship with OCAD" revealed Rob Reed, Senior Account Executive, who coordinated the project.

**Solutions**
Assistive Listening System
Connectivity: Air Media
HD LCD Displays
HD PTZ (Pan, Tilt, & Zoom) Cameras
Crestron Touch Panel Control System
Inclusive Wireless Microphones
VidyoPanorama/Vidyo Room

# The Technology

A key part of the solutions delivered by ET Group was  to be consistent with the Ontario Human Rights Code (OHRC), the Ontarians with Disabilities Act (ODA), and the Accessibility for Ontarians with Disabilities Act (AODA) and its regulations. This includes accessibility for all online content and accessibility training for all staff members. The web-based software was conformed to the criteria and ETG created accessible and conversion-ready formats involving training and materials.

## "The solutions let people choose what works best for them and makes many options available."

**The Assistive Listening System** helps bring power and clarity to the sounds that people need to hear, so that those who need extra assistance, for any reason, can hear effortlessly. Supporting up to four users at once, the system works through highly performant IR transmission, that connects to people's personal devices.

**The color-blind inclusive wireless microphones** can be both understood by seeing the colors (green/on or red/mute) or, by observing the LED blinking (a single blink/on or blink twice/mute) regardless of the color.

**The AirMedia** connection system that allows users to wirelessly present, using any Office Pack program and photos from their personal devices. This system supports iOS and Android mobile devices, as well as MacBook and PC laptops.

# "We worked with **ET Group** on designing the interface that we use to control the system, and that was pretty awesome."

**Vidyo Portal** platform constituted the IDRC's first high end primary communication system. They were using an inefficient communication platform, which proved to be lacking and difficult to work with. They needed an enterprise-grade video conference system for their global organization, that will enable them to communicate with hundreds of users in Toronto and around the world. Defying borders was a need for OCAD and a reason ETG implemented Vidyo Portal platform.

Many students from OCAD attend class virtually." Students really depend upon the system. Almost all of the work that they do is collaborative, so they require the ability to connect with each other through rich audio and video to do the work of inclusive design," said Jess Mitchell, while explaining how the research teams often have virtual meetings from all around the world, where they think through Inclusive Design projects. Everybody becomes part of the community even while being separated geographically.

**The Crestron Touch Panel Control System** plays a key role controlling the system. "We feel really strongly that interfaces can be designed in a way that excludes people and exclusion is exactly what we did not want. We wanted to create a system that anybody could come into the room and use, and ETG worked with us on creating that kind of interface," expressed Jess Mitchell. ET Group engineers modified all the Crestron Control Systems to make the panel able to adapt to all potential users and to deliver a high level of flexibility thanks to its features which meet the requirements of the Accessibility for Ontarians with Disabilities Act. Any user can easily control the Digital Media video matrix switcher, the overall room volumes, microphone inputs and routing of outputs. To ensure it is user friendly for all, some of the features include the ability to adapt the lights and colors, to assist a daltonic person, or change the size of the letters and numbers, to help a person with low vision or impaired vision

"Students really depend upon the system, almost all of the work that they do is **collaborative**, so they require the ability to connect with each other through rich audio, rich video, to do the work of inclusive design."

**Vidyo Room HD-230 codec** provides high quality video conferencing and a Virtual Meeting Room (VMR) platform. Members of the IDRC have found great benefits from using the VMR platform, which they find very inclusive. This system makes it possible for any person to join meetings from anywhere, anytime. Whether they are coming back from London in their car, travelling by train or simply working from home, they have the ability to connect from any device and start collaborating.

"We've had collaborators from India, who use the system to come into our meetings and help us think through Inclusive Design projects, and become a part of the community."
- Jess Mitchell.

Moreover, during traditional VMR, people have to meet in a room and call remote participants. "We have spent all these years adapting to technology, we have the capabilities now to make the adaptation happen on the other end. Technology should adapt to our needs, to our preferences in whatever context that we're in," explained Jess Mitchell.

She also explained to us how the platform was inclusively designed. It allows any user to call directly to the VMR and get the settings ready from wherever he/she may be, without having to wait for physical participants to join. Any meeting, can also stay virtual, without any physical participant during the VMR.

ETG also implemented specific equipment on each room, to meet their different learning and working requirements.

# The Rooms

The inclusive technology solutions were implemented in two different rooms on campus; Room 7220, the Research Laboratory, and in room 8322, a multi functional and multi-layout capable boardroom.

**Room 7220**, is the university's Research Lab. This is a large room in which the IDRC members gather to collaborate and do the work of inclusive design. Diverse research teams, with participants from all around the world, often have virtual meetings. ETG equipped the room with a system that enhances accessibility and adapts to any user's needs.

Using **VidyoPanorama** as the selected video conferencing codec, ETG created a panoramic view of 6 large LCD displays connected to two high definition PTZ (Pan, Tilt, & Zoom) capable cameras.

During traditional video conferences, the active participant is on the main screen and any other participant is excluded in a small window beneath. What the IDRC wanted to achieve, was for every participant to be considered, and ETG made it possible by assigning each remote participant a different screen. Not only did this create a more welcoming atmosphere, but it also made it possible to see each other's reactions in real time and enhanced human connection. For distance accommodation reasons, the 60" LCD display was installed in the center of the room to show shared content. ETG project managers reinforced this by implementing a video projector that will display content on the wall, enhancing visual acuity. All the displays can be controlled either through the inclusively designed custom touch panel or through any other connected device, using wireless inputs. In order to avoid any dead audio spots within the room, eight speakers, powered by a professional grade amplifier, were strategically installed.

**Room 8322**, is a multi-functional and multi-layout capable boardroom, in which local and international conferences and classes are held. ETG selected the right technology, to create an almost unprecedented level of collaboration, interactive information engagement and ideal sharing environnement. This room can host more that 30 people around its oval table, and within its multiple seats. It also has two isolated booths, than enhance privacy and allow students to hear podcasts or translate discourses.

The room is equipped with modular furniture, aimed to enable the re-configuration of the room depending on the needs of each team. Design tables with inclusive legs and rolling and traditional chairs can be moved around easily, creating u-shape, classroom, boardroom or oval room layouts. ETG's engineers had to consider all of these aspects while choosing the right technology. "The idea is that whatever it is that we are using, it should adapt to us," said Jess Mitchell.  Wireless microphones and speakers could be carried, strategically distributed inputs guarantee that there will always be an available input near a table. Wireless technology allows mobility and strategically placed screens can be seen from any place on the room. Dual 80" High Definition LCD displays mounted on the wall can display local content or video content, while including remote video participants.

The rooms are more usable than they were, more modulablar and reaping everybody is seeing the benefits of collaborating in a more effective and inclusive way.
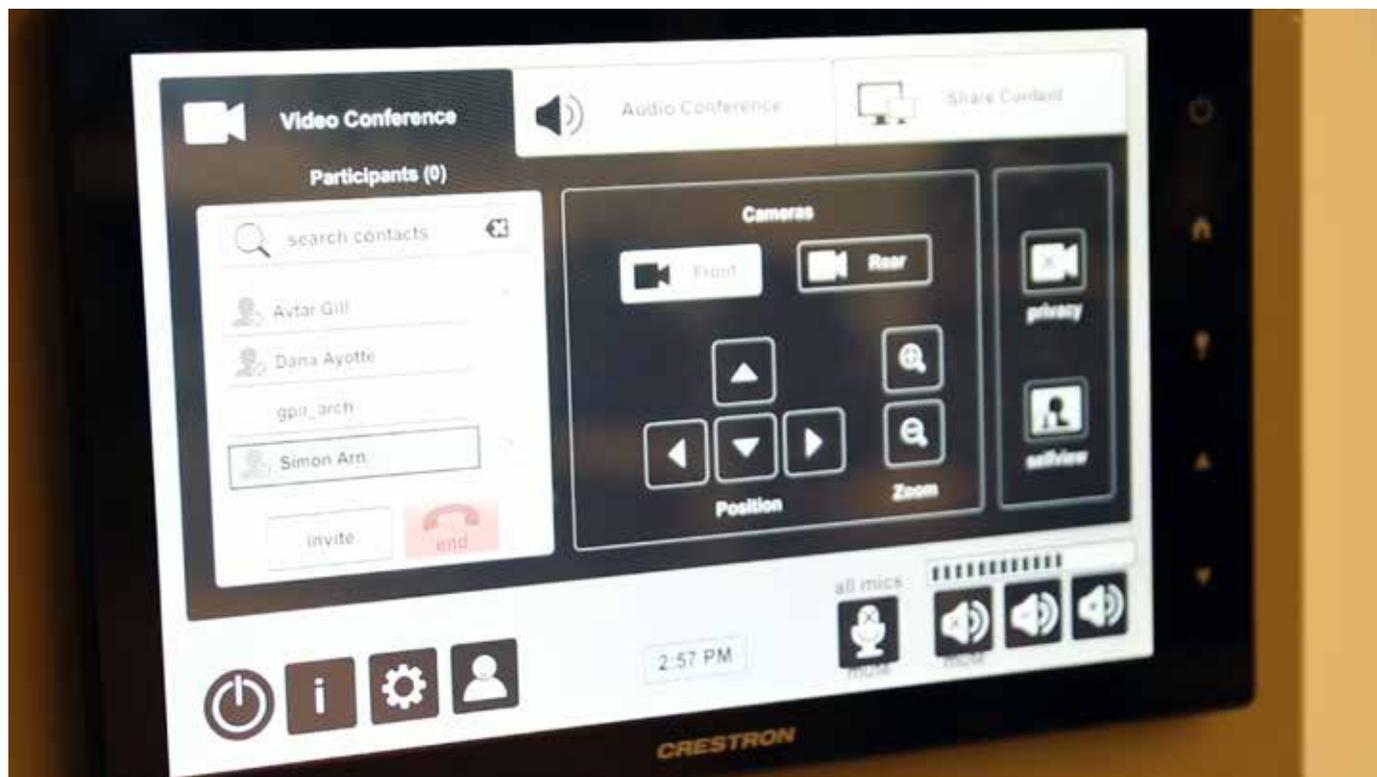
# A Process of Learning and Adapating

Implementing this kind of technology was a great opportunity for the IDRC to pursue their research. Remote collaboration encourages people to think about inclusion. Whenever there is a colleague that is up on the screen and not sitting next to the rest of the participants, they have to think about what that remote participant is missing from the experience of being physically in the classroom. They then have to describe and include that person in a way they wouldn't have to, if everybody was in the same room. It increases awareness and increases empathy, it increases an opportunity for each person to choose how they are going to learn and work. The experience has impacted their research on the metacognition level, getting people to explore more about themselves and how they learn well, what works for them, what kind of environment they need. "It's been interesting to see how people have adapted their use of the system. There are no fewer than 3 ways to do the same thing in this room, and observing the way people choose to do things, finding what is more comfortable for them, has been really instructive for us, " mentions Jess Mitchell. They have found out that this maybe different from day to day. This is what inclusive design is all about.

We are all so uniquely complex, that we cannot make generalisations or accurately talk about averages or typical, when we are talking about any of us. Inclusion means any aspect of human diversity or difference to us, people with disabilities, people who are in contexts that prevent them from having access to something. Everybody learns differently, therefore, from an inclusive point of view, the technology is positively affecting the classroom of the future, because it is transforming it into a place where options are made available for people, giving them the opportunity of choosing what is best for them. If a student feels more comfortable in a class using video and audio and text,  they can use that. If they feel more comfortable with just audio, they can use that as well. "This kind of technology is going to transform the classroom of the future, because you are going to be anywhere, it could be anytime. When students are empowered to make decisions about how they are going to experience something, it changes the way they learn. They become active participants, actively learning, being more curious and interested and asking questions," says Jess Mitchell. When interaction is turned that way, a completely different dynamic is created.