



PHOTOS BY BORIS MINKEVICH

Manitoba Construction Sector Council executive director Carol Paul oversees and receives feedback from students as they train at the IBEW 2085 training facility using a virtual reality training application.

Virtual reality takes the danger out of education

An electrifying new way to learn about hazards

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ON Wednesday, about 20 pre-apprenticeship electrician trainees in Winnipeg got their first sense of the kind of hazardous conditions they might face on a construction work-site but without instructors worrying about their charges electrocuting themselves or getting injured in any way.

Instead, using smartphones with Google Cardboard virtual reality platforms, the trainees experienced how to avoid accidents including falls, slips or trips; electrocution; getting struck by objects or getting caught in between equipment before they even set foot on a construction site.

The technology was developed by the Winnipeg interactive digital media studio, Bit Space Development Ltd., for the International Brotherhood of Electrical Workers (IBEW) local 2085, in partnership with a number of other members of the Manitoba Building and Construction Trades Council.

It's the first time virtual reality (VR) technology has been used as part of a training curriculum but it's already been adopted by the national training body for electricians and will soon be rolled out across the country.

"We think it's great that this kind of work is coming out of a shop in Winnipeg," said Dan Blair, the founder and CEO of Bit Space, which has already done a number of training modules using various technologies for other workplace organizations.

Chris Taran, vice-president and director of apprenticeship and training for IBEW local 2085, has been in the training business for 15 years.

He understands that the younger trainee cohort is more readily engaged when it can use this kind of immersive technology.

"(Students) will learn better with this rather than the traditional talking-head lecture and demonstration style teaching," Taran said.

Regardless of the medium, aspiring IBEW members have a rigorous practicum of training they are required to get through as they enter the apprenticeship programs, including legal and regulatory issues as well as job shadowing.

"VR gives them the ability to experience the job site but eliminate the danger," Taran said. "With the pre-apprenticeship program we are gearing them to get ready for work. But the difficulty is we can't just bring them on to any job site we like and start walking them around. They can put the glasses on... and all the dangers are there without any of the real danger."

The five one-hour long modules took Bit Space and its team of 10 developers, designers and photographers about a year to produce. Blair and his team spent plenty of time on construction sites themselves in the process.

Called Identification and Analysis of Safety Hazards On The Virtual Construction Worksite, the \$100,000 project was funded by Workers Compensation

Board Manitoba through its Research and Workplace Innovation Program (RWIP) that makes about \$1 million available annually to promote and fund research and technology development that can lead to the reduction of injuries and/or help workers return to work.

The WCB's Warren Preece said there are lots of opportunities for training.

Further, technology such as this can utilize one standard package of content that can be reached anywhere via Internet connectivity, he added.

"This is cutting-edge technology that makes training very accessible in the construction industry, which is a high-risk industry," he said.

Carol MacLeod, the executive director of the National Electrical Trade Council (NETCO), a national partnership between IBEW and the Canadian Electrical Contractors Association, said there are training facilitators across the country keen to use the technology that was showcased at a national training conference in Montreal earlier this year.

"The electrical trades are very high risk and safety is a primary overarching factor in all our training," she said.

"So the beauty of this application is that for new entrants or folks who aspire to have a career in the electrical trades, we can provide some form of safety awareness training in a virtual way from the safety of a classroom setting."

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Paul, with Bruce Cielen (back left) of the Workers Compensation Board and Chris Taran (right) of the International Brotherhood of Electrical Workers local 2085, with one of