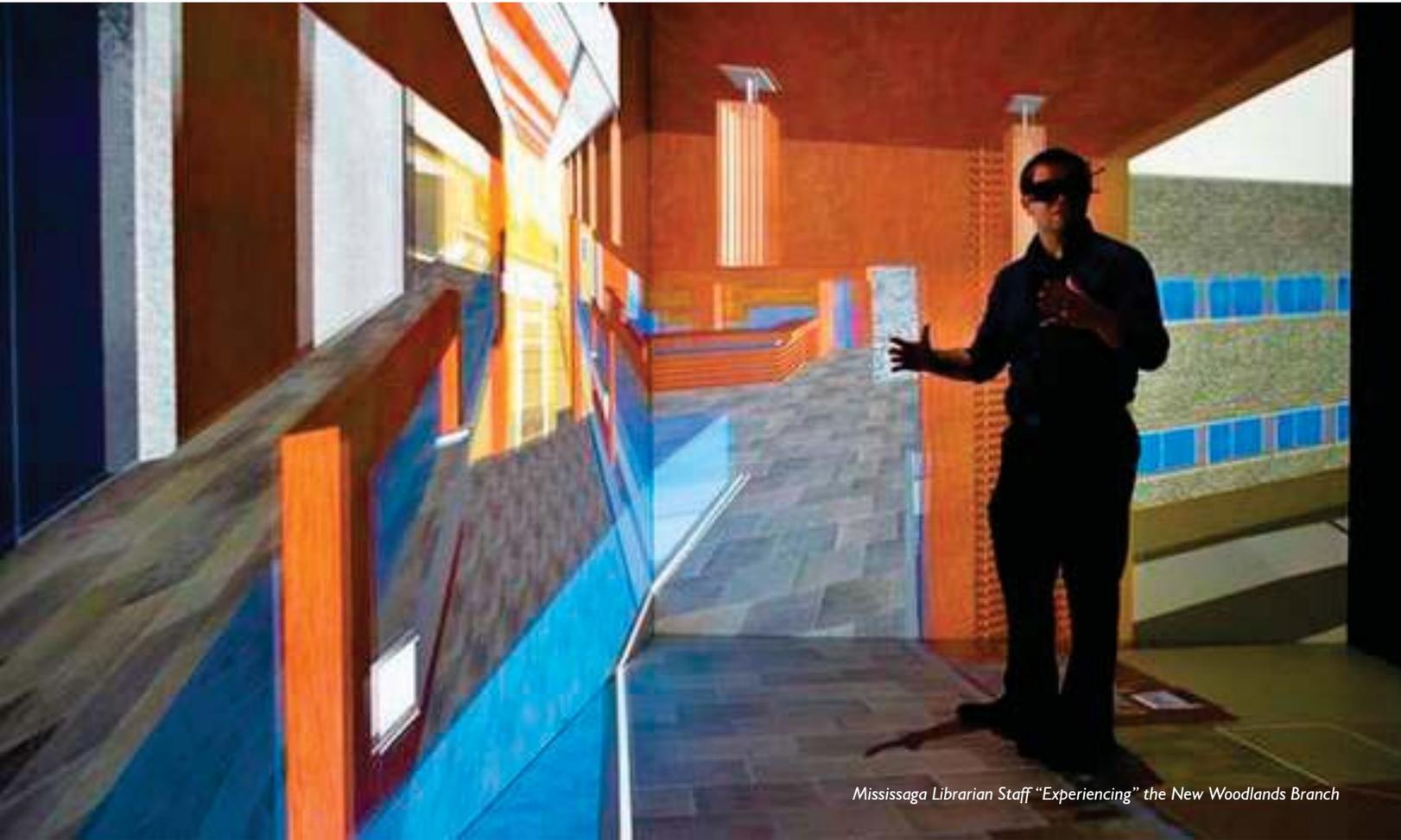


A 3D Device Changes The Conversation About Space



Mississauga Librarian Staff "Experiencing" the New Woodlands Branch

Article Courtesy of the The Globe And Mail

Jennifer Lewington | September, 2012

Months before construction this fall of Woodlands library in central Mississauga, Ont., branch librarians walked around the 7,000-square-foot space with all the bookshelves and furniture in place, as if it existed. Was it science fiction? No.

The Woodlands librarians had a virtual experience, made possible by interactive three-dimensional technology that creates the illusion of depth and perspective using stereoscopic (3-D) projectors illuminating images on four sides of a booth-like space. Stepping into the booth, they responded to the design as if it were real, peering around bookshelves, passing through doorways and standing in the parking lot to get a feel for the space and identify potential trouble spots. Architects, real estate developers and design professionals say the "immersive" environment, which creates a virtual rendering on a life-size scale, has the potential to change the

conversation with their layman clients. "This is an interactive tool where you can stand in a room, a lobby or a landscape area and manipulate the space and discuss it," said architect Paul Sapounzi, a partner with +VG Architects, which designed the Woodlands library. "This is a working tool," he added. "It's not a gimmick."

Developed by Christie Digital Systems Canada Inc., a Kitchener firm with an international reputation in digital projection systems, the technology is one of several 3-D visualization devices being commercialized by Reality Cave Inc., a local, privately held incubator startup. Reality Cave opened its first 3-D design centre, built at a cost of \$5-million, here last December.

It's betting there will be a growing industry demand to visualize condos, offices and restaurants, even large-scale neighbourhood projects, before they are built. Since the opening, the company has signed almost 20 members from industry and government, says company vice-president Jeff Botham. In a golf course-style membership, annual fees range between \$1,000

and \$5,000, with a pay-as-you-use charge of \$1,000 per hour at the Kitchener design centre. He said the company aims to set up five design centres worldwide by the end of 2014, including one in Toronto next year. Exploiting various sophisticated technologies – the 12 projectors have a total of 24 million pixels – the design centres are not portable: The client has to go to them. That’s why Sue Coles, area manager for Mississauga Library Services, and 30 city officials from various departments trekked to Kitchener last January for a virtual tour of Woodlands library, which will cost \$2.8-million to build.

The architectural drawings were loaded into encrypted software and illuminated by the projectors positioned at different angles to create the illusion of reality. Wearing special sensor “tracking” glasses and manipulating a joy stick to guide her through the space, Ms. Coles stepped into the theatre-like booth (5.6 metres wide, three metres tall and three metres deep) to immerse herself and her colleagues in the design.

They stood at the library check-out desk and saw that the height of some book shelves and display obscured their view of the children’s reading area. A vertical duct leading from an electric fireplace created another visual barrier. In response, the architect made small adjustments to the design. “This was an opportunity to be in the library without having to build the library [first],” Ms. Coles said. “It is fine to see it on a piece of paper but another thing to walk through the space and see the shape and size of things and the relationship between the spaces.”

Previously, the Mississauga officials would have examined a scale model or a two-dimensional animated fly-through of the design. “We were able to sense a sense of the volume of the space,” said Kendall Wayow, project manager for the library, and



a member of the Mississauga delegation that day. “We caught some issues that needed to be adjusted and tweaked the design,” he added. “It will help save the project money.” Kitchener commercial real estate broker John Whitney sees the potential for better communication between industry experts and clients.

“Most people, whether it’s a house purchase or a renovation, just can’t look at a 2-D plan and say ‘that will work,’” he says. “What this Reality Cave experience does,” he said, “is to let people visualize something that is not there yet.” Laird Robertson, a partner in Kitchener-based Robertson Simmons Architects Inc., said 3-D visualizations could also facilitate disputes between developers and municipal officials during site-plan approvals. “We spend hours trying to show them things to convince them



that what they say they are going to experience is not true,” Mr. Robertson said. With a 3-D view of a project, he says, “they could walk around a space and get a sense of its verticality, see the colours, textures and dimensions, and see tree landscaping and parking.”

The City of Waterloo recently incorporated Reality Cave into a citizen engagement strategy to imagine new uses for a former elementary school on a half-acre site in a mature neighbourhood. Once competing developers present suggestions for new uses of St. Louis school, purchased earlier this year by the city, residents will be able to review the designs in a 3-D format. Waterloo chief executive officer Tim Anderson likens the 3-D experience to “a virtual open house” that could elevate public engagement. “If we can demonstrate and visualize what is being proposed in a tangible way, it is better for everyone,” said Mr. Anderson. “It is a powerful tool that has the potential to change the way we do business.” Visualizing the perfect pub The owners of Morty’s Pub, a 31-year-old Waterloo, Ont., landmark half a block from Wilfrid Laurier University, plan to add a second pub in a former variety store opposite the university.

They plan to use Reality Cave for a three-dimensional imagining of the proposed 2,500-square-foot restaurant, a complement to the existing pub, well before the start of construction next year. “It takes out the element of surprise,” said Jay Taylor, co-owner of the current pub named for his father. With a virtual walk-through of the proposed layout, Mr. Taylor said he will be able to see if, for example, the chef needs more room to work or if the route from kitchen to tables is workable for wait staff.

“I am not an architect but I am an expert in operating a restaurant and visualizing foot paths, the guest experience and staff efficiency,” he said. A self-described perfectionist, Mr. Taylor said this new way of responding to architectural drawings is not about cutting time from the renovation process. “The point is to make it just the way I want it.”

+VG Architects is a full-service architectural firm offering new design, expansions and heritage restorations for cultural, educational, municipal, justice, healthcare, residential and recreational facilities. Our staff of +50 operates in five offices in Ontario, in Brantford, Kitchener, Toronto, London and Belleville. See www.plusvg.com for more information