Northern Alberta Institute of Technology

NAIT worked with AVI-SPL to create spaces equipped with the advanced technology that serves its students and industry clients.

Deliver an educational experience that produces career-ready graduates

The Northern Alberta Institute of Technology (NAIT) is a polytechnic that provides hands-on, technology-based learning in order to graduate career-ready people. Through the years, the Edmonton-based institution has been a trendsetter in education and public service by using advanced technology to shape and deliver the services its students and industry clients expect.

"NAIT puts a lot of effort into providing students with state-of-the-art technology in order to give them a quality learning experience," says Craig Hicks, education technology lead at NAIT.

The technology in this project was situated in two new buildings: the Productivity Innovation Centre (PIC), NAIT's front door to industry, and the Centre for Applied Technology (CAT), NAIT's home to schools for business, health applied sciences and technology.

NAIT worked with AVI-SPL on this project, continuing a relationship that goes back seven years. Over that time, Rick Winklmeier has been NAIT's account manager and design engineer, and he's seen the school evolve in its thinking about technology and what it can do.

"Years ago they could see the way education was trending and they started transforming their learning spaces with more projector technology, digital video walls, and sound systems," says Winklmeier. "So we've brought a number of projects to bear that we're quite proud of."

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Create the experiences learners need to train for their careers

The Centre for Applied Technology (CAT) is the second newest building on the main campus and is NAIT's largest building by number of classrooms and meeting spaces. It's also where AVI-SPL's team had to make sure the spaces lived up to NAIT's vision for them: giving students the experience they need to prepare for their careers.

"CAT brings together business students and health students in unique lab spaces that offer hands-on training that's not possible elsewhere," says Graham Werstiuk, an instructor in respiratory therapy at NAIT.

Across 160 classrooms and meeting rooms, AVI-SPL implemented the technology that helps instructors deliver course content that engages students. With AMX control systems, teachers and students alike can direct content from various sources to Sharp displays. They can also connect to Epson's BrightLink projectors, which are used to share and annotate documents and images. As it did with AMX and Sharp, NAIT has standardized on Epson, with over 1,200 projectors on campus, including all the classrooms.

"We like Epson projectors because they're bright, they're easy to maintain, and they're cost-effective to service," says Jason Tyler, audio-visual technician at NAIT.

Complementing those images is the high-quality sound delivered via Shure microphones, which can expand to additional frequencies and ensure that even students in the back of the room can clearly hear the instruction. Inside the CAT building, the Centre for Advanced Medical Simulation (CAMS) features specialized learning theaters that immerse learners in realistic environments. Instructors can observe students through one-way glass while recording the audio and video of their training.

"We train a lot of first responders, and we need them to perform at a high level," says Werstiuk. "This center gives us a unique tool to prepare them for that."

One of its high-profile areas is a 360-degree theater holodeck that places students in simulated, controlled environments so they can train for real events amidst wind, sounds, and other situations that might pose a challenge.

Epson projectors and Christie's Pandoras Box software drive the 3D projection mapping that creates the visuals. To create a fully immersive experience, AVI-SPL also provided a custom-designed audio and lighting system and truss assembly.

"Places like Disney World are using Pandoras Box for their 3D mapping," says Tyler. "Nothing else could come close to what we were trying to achieve."

In common areas, Sharp displays function as digital signage, which typically shares information for students and announcements about upcoming events.

NAIT monitors and manages the above areas, and a host of other network-connected devices across campus using AMX's Resource Management Suite (RMS). NAIT's two AMX programmers can customize the system so that it meets their exact needs, such as providing remote monitoring and servicing in the event of a failure, as well as remote firmware upgrades for all devices all at once, saving countless hours of time for the NAIT support team.

The CAT building jump-started a digital transformation in other areas, including the Productivity Innovation Centre (PIC). Where CAT is focused on student

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education, PIC is the first and only NAIT facility that directly serves industry clients. It also hosts events, conferences, and team-building exercises for business and government agencies.

The building's atrium is a bright, open meeting space that contains the 4x4 Barco UniSee wall that meets NAIT's requirements for a seamless video wall image. Community Entasys line arrays provide high-quality sound for the atrium, and the entire system is controlled by an AMX control system.

The PIC building provides a high-end experience during events that may include anywhere from 20 to 400 people. It also offers industry-leading corporate training and applied research opportunities. For all of those reasons, PIC needs high-impact technology so that presenters and teachers are easily seen and heard by attendees and learners.

"A lot of the equipment is geared toward specific industries," says Tyler. "We have to meet their needs and allow them to train in proper ways."

Within PIC is the Centre for Applied Disaster and Emergency Management (CADEM). Industry professionals use the CADEM lab and its simulation technology to learn best practices and train municipalities and other focus groups for the emergency management of disasters like floods and wildfires. It's also an active control room for emergency events.

Powering CADEM's experience are AMX control systems, including a 22" wide-format touch panel found in the control room. Using this system, instructors send relevant information to multiple displays, cameras, and audio devices within the room. Sharp interactive 4K monitors, installed both as touch tables as well as wall-mounted displays, are provided at various stations throughout the space. A 5x2 NEC video wall is at the heart of the CADEM workspace, providing a main display that can replicate the images shown on the touch tables.

A separate control room allows for monitoring and control of the space, and two breakout/debrief rooms are connected via the AV system to allow for discussion between operators and participants during and after the simulation session.

A Crestron NVX distribution system provides interconnectivity for all AV signals between the various areas and stations for CADEM, with over 50 NVX endpoints connected to allow for maximum flexibility and routing of the signals.

Challenges are always a part of every project, and with one of this scale, the main challenge was time. Sometimes construction delays or inclement weather would add to the pressure, but AVI-SPL's team came through to meet the deadline.

"Every time we've worked with AVI-SPL they've been able to overcome those challenges, whether it's bringing on more staff or working overtime," says Tyler. "AVI-SPL is the highest quality company we've worked with here at NAIT."

Well after integration, AVI-SPL continues to support the entire CAT building and be the first to respond to any technology issues.

"AVI-SPL is fantastic with their service," says Tyler. "If we have a piece of equipment go down in a room, we can pick up the phone and they've got a product being shipped that day. I couldn't have better support."

An energy unlike any other

When the CAT building first opened, it was the first academic space on campus

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where students from different schools could interact. And based on their reaction, it was one they'd been waiting for.

"There was an energy in this space that was unlike any I've seen on campus," says Hicks.

That kind of positive engagement extends to the classrooms, where the combination of solutions gives the instructors an extra level of interaction with students. Students connect with their devices and interact with what the instructors are doing from the podium or lectern.

"They've had a great response to the classroom technology," says Hicks. "Our instructors are achieving things they didn't think they could do, especially when it comes to student engagement."

Over at the Productivity Innovation Centre, NAIT is meeting its mandate to meet the needs of industry.

"With the CADEM, we've become the largest and best emergency management lab in Canada," says Tyler. "We've had multiple industry professionals come in and say they've been blown away by the technology."

Clients can use PIC and its services for applied research and training sessions, as well as events like parties and senior leadership meetings.

With the addition of the new technology, students are getting the kind of hands-on preparation that pays off in real circumstances.

"Students will come back to us after their clinical rotation and say, 'Remember that simulation we did? Well, the next week I experienced exactly that,'" says Werstiuk. "It's exciting to be able to put students through experiences they can't get anywhere else."

At A Glance

Organization
Northern Alberta Institute of Technology (NAIT)

Location
Edmonton, AB, Canada

Market
Higher Education

Solutions
Crestron, NEC, Barco, Epson, Sharp, Shure, AMX

About AVI-SPL

AVI-SPL is a digital workplace services provider that works with organizations globally to improve team collaboration and unlock new business value. We are the largest provider of collaboration technology solutions, which includes our award-winning managed services. AVI-SPL's highly-trained team works hand-in-hand with organizations worldwide – including over 80% of Fortune 100 companies – to strategize, design, deploy, manage, and support AV and UC solutions that are simple to use, scalable, serviceable, and measurable to ensure business objectives are achieved.

Featured Partners

Fig 1.1

Fig 1.2

Fig 1.3

Fig 1.4

Fig 1.5

Images

Fig 1.1

NAIT's Simulation Centre features 360-degree image/video mapping and a texture baking system. It can simulate real-life scenarios to provide students as close to an authentic medical situation as possible.

Fig 1.2

An instructor teaches students in the Centre for Applied Technology. NAIT uses Epson BrightLink series projectors alongside other innovative technologies in the classrooms.

Fig 1.3

The Centre for Applied Disaster and Emergency Management provides hands-on training, using innovative solutions that reflect current global best practices.

Fig 1.4

The Productivity and Innovation Centre's atrium and main foyer includes a high-quality Barco UniSee video wall for large-scale events within PIC, which was designed to LEED building and construction certification standards.

Fig 1.5

A user configures and controls one of the health simulation theaters via a custom-programmed AMX interface, making interaction easy for veteran and new users alike.