

Project Profile Ontario Science Centre



ONTARIO SCIENCE CENTRE, ONTARIO

Set on the edge of a ravine, the 540,000-square-foot Ontario Science Centre is the size of a large airport, with three separate buildings on different elevations as they descend into the valley. Nearly 1.4 million people visit the Centre annually to take in everything from the science of electricity and space exploration to how the body works.

The Centre's drive to have its visitors get "lost in science," wandering from building to building, level to level, is a great premise. However, this "lost" theme can be a detriment to life safety when a fire alarm is triggered somewhere within the massive complex.

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"We needed a system that would be user friendly, making it easier for security staff to pinpoint where the alarm was. One that would allow us to zone out an area during private parties," said John Bradshaw, manager of facility operations and services at the Ontario Science Centre. "All of that combined, that's what we wanted."

To develop a flexible, life-long solution to replace the Centre's aging fire alarm system, consultants and facility managers came together with the provincial government, which owns the property, to design a system to meet the Centre's myriad of fire protection challenges.

"We knew we needed a new system that would go in the future for a minimum of 10 years. And we needed it to address the needs of the multiple operations we have here—we have the public coming into the building, we rent our facilities out in daytime, nighttime, and there's shop people and offices in the background," Bradshaw exclaims.

The group settled on an ONYX Series fire alarm and voice evacuation system from NOTIFIER. Engineering Consultant Morrison Hershfield specified a network of six NFS2-3030 fire alarm control panels. These were placed throughout the three buildings and networked together with two ONYXWorks graphic workstations providing extensive monitoring and control of the entire network.

Master Control with a Birds-Eye View

The speed of emergency assessment and response was a critical factor in the system's design. The Centre's new network of fire alarm control panels, smoke detectors, sprinkler monitoring points and even specialized gas and aspirating detection devices are tied to the two ONYXWorks workstations. Providing immediate information on the location, cause and progression of fire alarm events, these detailed graphic layouts of the Centre and its major fire alarm components help facility and security officials quickly decide on the appropriate response.

According to Frank Detlor of Robinson Solutions, the company that engineered and installed the NOTIFIER ONYX Series system, several weeks of work went into designing the floor-by-floor graphics that would appear in the workstations to accurately represent the intricate mix of odd-shaped buildings, levels and sub-basements that make up the Ontario Science Centre.

Designed to have an intuitive interface, ONYXWorks workstations identify system alerts by magnifying the event location and device(s) in alarm while providing both a graphical and written description.

"Now with addressability on all inputs, they can hone right into where the problem is and deploy their security faster," says Detlor.

In addition to accurately pinpointing where a problem resides, the new fire alarm monitoring system provides operators with a whole new level of control over any part of the network. The flexibility of simply clicking icons to temporarily deactivate certain devices will help the Centre practically eliminate nuisance alarms.

"That flexibility is necessary because the museum takes in a lot of temporary exhibits each year, and bringing them in and setting them up would often lead to false alarms of one sort or another," states Detlor.

Private events held in different areas of the Centre have historically led to increased false alarm incidents – a dilemma Bradshaw believes the new monitoring workstations can cure.

"ONYXWorks allows security operators to turn off sound alarms in specific areas of certain buildings if, for example, they are being rented out for a private party or a corporate function. The strobes still flash, but the event isn't disturbed by what's likely a non-emergency in another part of the building," says Bradshaw. "If there is a problem, security staff can easily sound alarms in the rented sections"

In a building containing its own shops for paint, carpentry and other trades, aspiration detection systems play a significant role in quickly and unequivocally verifying true smoke emergencies. Although not required by code, these air-sampling systems provide very early warning smoke detection – a necessity for high-value and critical facilities such as museums, hospitals, data centers and more.

Saving Life, Property and Investment

The options of using third-party contractors to perform service and maintenance with parts available through a handful of authorized distributors in the region were big benefits of utilizing this line of technology in the minds of the property's management team. NOTIFIER Engineered Systems Distributors such as Robinson Solutions having factory-trained personnel, well-versed on the proprietary equipment, will handle higher-level programming or additions

The Centre's failing public address system was also in need of help, but its replacement was estimated to cost more than \$100,000. Following a few software and programming enhancements made by Robinson Solutions, Centre staff were able to utilize the fire alarm system to broadcast routine messages in English and French through its 1,124 speakers throughout the facility. Robinson Solutions' repurposing the NOTIFIER system's intelligible audio capabilities in this way saved the Centre close to \$90,000, according to Rowe.

To protect its life safety investment, the Centre made sure its new system had both the capacity and capability to be easily expanded to accommodate future facility expansions. Additional nodes and devices can be easily added if needed, though the Centre claims to have no plans to do so at this point.

Modern Fire Response Technology

The consultants who wrote the project's spec were big proponents of including a unique emergency scene assessment tool, made for and designed by firefighters. The FirstVision tool from NOTIFIER is a touch screen display prominently located at the Centre's main doors for easy access. The unit helps first responders determine the origin and migration of a fire and locations of emergency alerts, potential hazards or areas of refuge within the affected areas. Interactive floor-by-floor layouts of the Centre, depicting activated fire alarm components, water supplies, fire barriers, emergency shut-off valves and other site-specific details enable emergency officials to make fast, effective response plans.

"They wanted FirstVision because it's cutting-edge technology, appropriate for use at a Centre that's all about the state-of-the-art and exploration," says Detlor.

The facility employed a single, integrated fire alarm solution to improve the speed of its emergency response and reduce false alarms, while benefiting from some cost-saving features. Ultimately, the technology chosen to protect its visitors and properties embodies many of the same cutting-edge attributes demonstrated by the Ontario Science Centre's own scientific exhibitions.

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