

Project Profile Toronto Detention Center



SUCCESS STORY

As part of an effort to modernize its correctional facilities, the provincial government in Ontario, Canada, commissioned the construction of the Toronto South Detention Center (TSDC). The state-of-the-art facility, which was built in two phases, consists of three, seven-story towers and can house up to 1,650 inmates. Attached to the facility is the 320-bed Toronto Intermittent Center (TIC), which was built to house inmates serving weekend sentences.

The TSDC is the result of a public-private partnership that combined design, construction, financing and a 30-year maintenance agreement. In addition to inmate housing, the facility also boasts a large administration building, admission and discharge area, and a power and utility structure. To support such a sprawling complex, government officials knew they needed a comprehensive fire alarm and suppression system that could accommodate their unique set of challenges, while also being easy for guards and other facility personnel to use.



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SYSTEM INTEGRATION AND CONTROL

To accomplish this, the province turned to Vipond Inc., a leading distributor and integrator of fire and life safety solutions throughout Canada. According to Vipond Vice President Mike Godara, officials sought a system that could be monitored and controlled from a central location and could also interface with other building management systems. However, to meet Ontario's fire code, the system also had to have standalone functionality.

"The organization sought out a systems integrator to provide a complete low-voltage package and one of the major components of that was the fire alarm system. It is a very large facility that's occupied by numerous people at any given time, so we had to design it to have minimum false alarms," said Godara. "It also had to be easy to use and dependable, which is why we decided to install a NOTIFIER system. The system we provided can be used as a standalone solution for each tower and each area, but they are also networked together."

In addition to seven NOTIFIER NFS2-3030 fire alarm control panels, Godara and his team also installed two ONYXWorks workstations, which enabled the integration of the fire alarm system with other security and surveillance networks installed throughout the jail. The fire alarm system is controlled from a central alarm and control facility within the administration building. Additionally, the NOTIFIER system is connected to the TSDC's security system at 30 locations throughout the facility, providing guards with an interface to the fire alarm on their workstation.

EVACUATION COMPLEXITY

"The NOTIFIER system is also integrated with a voice communications system and a firefighter's telephone, so they can page from any area in the facility," added Godara.

Due to its very nature, TSDC also required the ability to evacuate only certain portions of facility in the event of the fire. According to Godara, the Vipond team was able to satisfy this requirement due to the flexibility of the NOTIFIER system.

"One of the bigger challenges was to provide selective evacuation," said Godara. "You only want to evacuate the area where the fire is and the NOTIFIER system is flexible enough to achieve that. With the graphical user interface on the ONYXWorks workstation, guards can pinpoint the exact location of a fire quickly and take action."

Smoke Detection and Control

Vipond was also tasked with the responsibility of installing smoke detectors throughout the facility. A total of 2,500 spot-type smoke detectors were deployed throughout the complex.

"With this many smoke detectors inside the building, it ensures early detection in the event of a fire," said Godara.

However, due to the threat of vandalism, Godara and his crew had to come up with an innovative way to install the devices inside inmate cells.

"The code requires a smoke detector in each cell of the prison. But because of the potential for vandalism, we did not put them inside the cell itself," explained Godara. "Rather, we mounted the detectors in the return air ducts located in the service shaft of each cell with an easy access hatch for maintenance."

About 1,200 System Sensor speaker strobes were installed as part of the project, as well as a smoke control system consisting of large number of dampers and fans, installed to reduce smoke – and other airborne matter – from spreading throughout the building during fires or other events.

"The system also provides a very large smoke control network in the facility, so we are monitoring and controlling about 800 dampers for smoke control purposes," added Godara. "It was a big challenge to provide smoke and tear gas control for the facility, but we achieved it through the implementation of the NOTIFIER system."

Vipond started the initial design stage for the system when Ontario first announced construction plans for the TSDC, but Godara explained the installation didn't start until two years later when the contract was actually awarded. As such, keeping on the project schedule was a challenge in and of itself. Adding to the complexity was the matter that much of the jail's interior was pre-fabricated in the United States.

"Maintaining the project on a very tight schedule was a challenge, but we were able to finish the project ahead of schedule," said Godara. "This was the most sophisticated, high-tech integration of a fire alarm and voice evac system that you'll see today."

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