

Case Study: Doing More With Wireless

Honeywell Analytics' 301W Wireless Gas Detection System Delivers Safety Plus Cost Savings and Energy Efficiency at a Canadian Ice Arena



301W

The Situation:

Mount Boucherie Multiplex is a 2800-seat ice arena/concert hall/multi-purpose entertainment venue in Westbank, British Columbia. Owned and managed by the Regional District of Central Okanagan, the Multiplex is an architectural centerpiece of the community, and home to the Westside Warriors pro hockey team.

At Multiplex, city construction codes required the installation of equipment to monitor two dangerous gases: nitrogen dioxide from diesel exhaust at loading docks and carbon monoxide from the exhaust products of the ice resurfacer used during hockey games, ice-capades and other events.

Care Systems, the contractor hired to install the gas detection equipment, solicited proposals from different manufacturers. Honeywell Analytics was awarded the contract to provide its 301W wireless gas detector on the basis of overall value: the 301W offered the lowest installation costs plus a guarantee of reliability and quality backed by the Honeywell name.

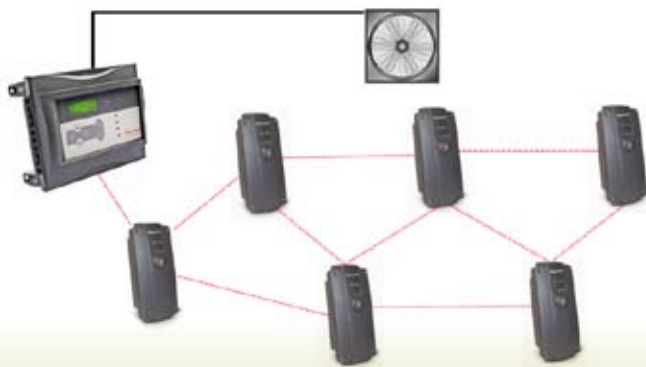


Diagram of the 301W wireless gas detection network at Mt. Boucherie shows unique mesh network design with failsafe gas detection coverage along with on-demand, 4-20mA connection to ventilation system.

The Installation:

The 301W integrated with the existing architectural plan of optimal energy efficiency. Green building systems already planned for Multiplex included daylighting, low-flow plumbing fixtures, high-efficiency boilers and chillers and variable-speed ventilation. In addition, the arena was constructed with spare use of exposed conduit, so as to enhance the aesthetic appeal. The 301W wireless

gas detector was a natural fit for the build-out; the entire wireless system requires no surface conduit, extra wiring or materials.

A series of tests and site evaluations were carried out to determine how many wireless gas detectors it would take to protect the 6000 square foot area around the perimeter of the ice oval. The team led by Jim Fuchs of Honeywell found that only six wireless detectors were needed to do the job, a credit to the 301W's unique mesh networking. What's more, the testing, installation and commissioning process was carried out in three to four hours, said Fuchs, whereas a traditional gas detection installation typically would have required several days.

The six 301W detectors were installed at 100-foot intervals, on walls in back of the player's benches and on massive columns located in the first few rows of seating. The 301W detectors send signals to a single 301C controller mounted on one of the columns near the ceiling. The controller in turn, is wired to the direct digital control (DDC) system. Whenever the 301W detects unsafe levels of carbon monoxide, 301W communication to the 301C is nearly instantaneous; and the 301C activates a relay to the DDC triggering high-speed operation of the outside air ventilation system, opening dampers and bringing freshly conditioned air into the building.

The installation team was pleased by how quickly and smoothly the installation went. Network coverage of the sensor environment was absolute, installation was plug-and-play and reliability is extremely high.

Six months have passed and the 301W system has continued to impress the installation contractors and building owners. Said Project Manager Ian Long of Care Systems, "With equipment of this kind, you might say that no news is good news—and we don't have any news to report. The system is checked regularly by maintenance staff and I haven't heard any bad reports to date."



Arrows indicate location of 301W gas detectors at arena. Strategic placement of six sensors around ice oval ensures total area coverage.

Special Merits of the 301W Gas Detector

The 301W wireless gas detection system is powered by a two-year 'fit and forget' battery operation and no calibration is required.

Non-interference from WiFi, Bluetooth, cell phones and other wireless devices is assured by the different frequency range and communication protocol used by 301W transmitters.

The reliability of 301W can be attributed to its unique mesh networking. The network is 'self healing'—if one sensor fails, the network automatically reroutes the signal to another sensor. Messages travel from the source (301W) to destination device (301C) by hopping over other devices (301Ws) on the path in between. As long as a 301W detector can sense two network devices within its vicinity, it has a healthy connection to the network. This failsafe system design adds another level of security to the safety of a large public arena.

Wireless Gas Detection Payoffs

- Improved air quality
- Reduced installation and build time
- Reduced material costs
- Increased energy efficiency
 - Improved human comfort and safety
 - Increased reconfiguration flexibility
 - Reduced energy costs
 - Increased temperature stabilization

Wireless Savings Add Up

Honeywell Analytics' 301W wireless system at Mt. Boucherie Multiplex has produced a win-win-win outcome. For the contractor, it resulted in an easier, faster installation. For the building owner, it offers the continued assurance of safety compliance, energy efficiency and visual appeal. For arena visitors, it offers enhanced comfort and safety through better indoor air quality.

The 301W's inherent network integrity and controlled fan operation also contribute to reduced maintenance, heating and cooling costs. As Fuchs said, "Our mission was to install a gas detection network that would help fulfill the owner's goals of safety and energy reduction without a major capital investment or labor expenditure on their part. I think we succeeded in a big way."

The 301W wireless gas detection system at Mount Boucherie exemplifies the kind of installation, labor and material cost savings and sustainable design features that make today's wireless gas detection systems a perfect "mesh" with today's intelligent building concept. In these respects, the 301W already serves as an excellent example to the community and the building trade.

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Cut costs on your next installation!

Go to www.honeywellanalytics.com and click on the link to the 301W interactive presentation, then click on the link [Wireless versus Fixed Comparative Cost Calculator](#)

Wireless Testimonial Q&A: Ask the Installer Ian Long of Care Systems



Ian Long

About the Installer: Ian has been involved in the building controls industry since 1987. He has supervised the build-out of many gas detection/life safety systems in large buildings, condominiums and park-aids. The Honeywell Analytics 301W installation at Mount Boucherie was his first wireless life safety project.

QUESTION

Q: What's your opinion of the 301W?

ANSWER

A: I think it's a great 21st century product whose time has come. It offers great flexibility and has fewer restrictions than other gas detection systems. You can move the gas detectors around quite easily when modifying a system design. The wireless detectors are the perfect monitoring solution for hard-to-reach locations—around corners, for example. The system requires very little conduit. It saves a lot of headaches, time and labor.

QUESTION

Q: The 301W wireless system was installed six months ago at Mount Boucherie. How is it working?

ANSWER

A: I personally think it's operating better than we could have expected. Every time we look at the controller, we're getting good signals. From the perspective of six months later, the best thing one can say about it is 'No news is good news.' The 301W is running without incident.

QUESTION

Q: Do you plan to install the 301W in parking structures?

ANSWER

A: We're trying to persuade engineers to do that. The feeling I get from building owners is that they'd like to install 21st century technology like the 301W, but they don't want to be the first to do so. But now that the 301W has worked so well and has a track record of successful operation, I'd like to see it used in concrete park-aids of which there are so many being built right now. It would save us so much in core line and related expenses.