

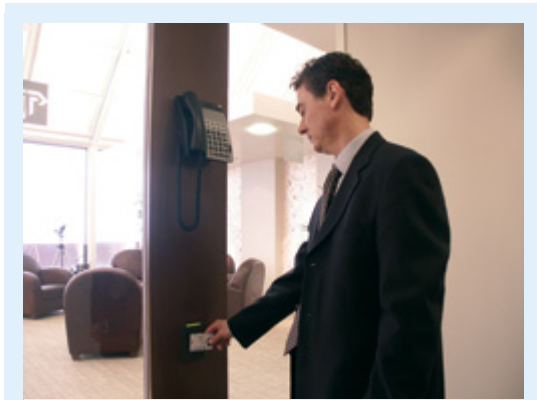


May 2005 issue

Security Facelift

Through the use of smart card technology, the Petro-Canada Centre in Calgary, Alta., was able to upgrade its access control system, while at the same time future-proof the facility for potential vending and biometric applications.

By Jack Kohane



Following a comprehensive investigation of the previous access control system, Mark Bowden, vice-president of HMA Consultants, steered the powers that be at the Petro-Canada Centre towards using smart card technology and implementing HID cards and proximity readers.

For 20 years, the card access system installed at the Petro-Canada Centre in Calgary, Alta., served its occupants' needs extremely well.

But when Colin Best went walking through the towering facility one day last year, he quickly realized it was time for the property management company he works for, Brookfield Properties, to take a hard look at the system, that for the most part, was approaching or had surpassed its expected lifecycle.

“Actually, it was more of a general overhaul,” nods the manager of security systems for Brookfield Properties' Calgary Portfolio of real estate, which manages and co-owns (with ARCI Limited) the twin towers that comprise the Petro-Canada Centre in Calgary, Alta. The Centre houses the head office of Petro-Canada, but is also the home base of several oil and gas companies.

Built in 1983 in the glitzy late modernist architectural style and encompassing about 2.1-million square feet, the Centre houses the headquarters of one of Canada's largest oil and gas companies, together with retail and commercial space. The Centre's 52-story West Tower and its mirroring 32-story East Tower are not just the tallest buildings in Calgary, they are the loftiest spires — second only to the Rocky Mountains — in Western Canada, constructed with enough concrete to build a sidewalk from downtown Calgary to Banff.

“The original security system installed in 1984 by Ingress Logic Systems (Ingress Logic is now the DoorTek Corp. based in San Antonio, Tex.), was designed [similarly] to those found in high-rise developments,” explains Best. “The principle is that there is usually a panel with multiple reader ports that exists in a riser room on one floor and feeds reader doors for several floors above and several below. This makes troubleshooting difficult, and when the lease expires, a dispute as to who owns the security panel equipment can arise.”

Beginning in 2003, while crunching out a rough budget slated for security modernization, Best and the management team at the Petro-Canada Centre hired HMA Consultants in Calgary to investigate the existing system to determine the best option for its future.

“We needed to know whether to upgrade or replace the equipment with a whole new system from an alternate manufacturer,” says Best.

Upon its hiring, HMA conducted an independent study of the proposed access control system upgrade strategy for the Petro-Canada Centre that included a full migration (including cards and readers) to proximity technology from Wiegand card technology.



“We recommended the use of smart card technology because we felt that proximity technology was in the mature years of its life cycle,” says Mark Bowden, vice-president at HMA, an international consulting firm that provides a range of independent security services. “Smart card use in security applications had been proven, was available for the same price as proximity products, and we could see that the smart card could enable the card to be used for other future applications, such as vending and biometrics, which would future-proof the installation.

“Following the tests,” he adds, “Brookfield was comfortable in moving forward with smart cards. As a multi-tenant facility, the Petro-Canada Centre is now able to market the fact that it has a state-of-the-art security installation in terms of software, hardware and card technology and this may be appealing to potential high-tech tenants. The smart card reader tests conducted alleviated initial compatibility concerns with the access control system. The only issue was associated with the additional power requirements of the card reader, which was overcome with the provision of a new power supply.”

Bowden then approached HID, a manufacturer of smart cards and readers, about becoming involved in the project and the California-based access control leader was more than happy about having a 350 card reader system used in this project that it offered to send readers and cards to Brookfield for evaluation purposes.

Best’s gut instinct was correct as HMA’s completed study established that upgrading rather than wholly replacing the system would be the most cost-effective approach. Best concedes that as the retrofit process ignited, he discovered the immensity of the project was one that the security department alone could not handle. Due to this realization, construction manager, Alen Niznik, was brought on board to co-manage the assignment, set feasible budgets and produce critical timelines.

Agreeing that creating a hybrid system of new and revised components was the optimal route for the Petro-Canada Centre’s security needs, Niznik immediately set his sights on receiving prices from several competing bidders to supply DoorTek hardware, and later oversee the installation implementation.

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— Alen Niznik

“Our original plan was to simply replace panels where they existed and keep conduit and wire in place,” recalls Niznik. “I suggested we also look at flat lining the installation, so as to build a uniform system that meets the long-term needs of a multi-tenant complex.”

Niznik notes the initial scheme for the power infrastructure focused on reusing existing power. However, the new design allowed the entire system to operate on a building-wide UPS system with back-up transfer switches to the standard building emergency power supply. This route has proven to be a cleaner and more organized solution.

“The real challenge was installing equipment with minimal disruption to the daily operations of the Centre’s thousands of occupants over the six months required to complete the upgrade,” remarks Niznik, likening the project’s intricacies to that of mounting a major military campaign.

“Our strategy was to attack the installation floor by floor during times when tenants were away from their offices,” adds Corey Dimitroff, the access system administrator for the Petro-Canada Centre property, who helped coordinate the day-to-day upgrade transition, as well as providing on-the-job training for the assigned electricians. “We started at 3 p.m., ripping away old wiring, tearing out outdated equipment, then re-wiring and installing the new system.”

Essentially, that opened a 24-hour window to accomplish the changeover, ensuring the new system on each floor was fully operational the next day.

To supply all of the necessary and required hardware for the project, Best and his team selected Jim Jarrett of Jarrett ESP Services in Nepean, Ont.

“Our criteria for making that choice wasn’t based solely on economics, but on a dependable performance record too,” says Best. “We’ve built a rock-solid relationship with Jim, who has provided us with the technical support needed over the years whenever equipment has faltered. Although the installation itself was handled locally by in-house expertise, it was seamless enough that Jim didn’t get many calls.”

Dimitroff and Best spearheaded on-site support during the retrofit. “We were responsible for the assembly, configuration and testing of the panels prior to deployment in the field,” says Dimitroff, “But we had a lot of assistance from the entire security group, from assisting with panel assembly to programming, to providing manual security coverage for the floors in transition.”

Completed in mid-February 2005, the Centre’s upgrade includes the DT2001 software package developed by DoorTek. The DT2001 software and NP200 node processors are the basic elements in the supplier’s newest access control line-up, providing a scalable range of access control using a single package, offering the option of upgrading old DOS access control systems to Windows, as well as upgrades of existing Windows systems.

“It’s a powerful, simple-to-operate program, able to control and monitor systems ranging from a few doors to hundreds of doors,” says Bob Gardner, DoorTek’s president. “We’re proud to have our equipment at the Petro-Canada Centre, which for us is a Class AA office project.” (In the building industry, ‘AA’ signifies a property of the highest construction and technological standards.)

The system upgrade also included more than 380 HID iClass card readers and approximately 60 of the DoorTek 200-series node controllers. Networked to five HP small form factor workstations, the system currently hosts 70 nodes, more than 110 RIC panels and a Hewlett Packard DL380 server that manages more than 60,000 transactions daily.

“Our original thought was to go with the industry standard 125 Khz cards and readers,” Best continues. “But our consultants recommended we contact HID, which we did. They convinced us to go to iClass

contactless smart card technology, which was beneficial in terms of cost, as well as giving us the ability to use the many possibilities of iClass. Our building population currently holds more than 13 Mb of memory stored on their access cards.”

Best commends the energy and creativity of everyone involved, emphasizing that a highly skilled and motivated team is an absolute must in a project of this magnitude. “It means,” he suggests, “thinking outside the box in the preliminary stages, working out a strategic plan to minimize surprises as things move forward, and working as a dynamic unit to get the job done effectively.”

Jack Kohane is a freelance writer based in Toronto, Ont.