EcoStruxure™
Innovation At Every Level

INNOVATION

Innovation transforms historic landmark hotel

Schneider Electric's EcoStruxure™ Building solution, installed by an EcoXpert™ partner, delivers improved guest satisfaction along with increased operational and energy efficiency in this heritage hotel.

Fort Garry Hotel, Spa & Conference Center - Winnipeg, Canada

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Introduction

One of city's most recognizable architectural landmarks, the century-old Fort Garry Hotel, Spa and Conference Centre ushers in a new era of modern-day style in downtown Winnipeg, Manitoba. Catering to guests who appreciate local history mixed with authentic charm, this iconic 242-room "Grand Dame" is a favorite for weddings, romantic getaways and wellness weekends. One of Canada's grand railway hotels, the Fort Garry Hotel was built in 1913 by the Grand Trunk Pacific Railway and is designated a National Historic Site of Canada.

Glamorous public spaces are the setting for farm-to-table cuisine, and high-tech amenities fill guest rooms with soaring 10-foot ceilings. Amenities include a well-equipped fitness center featuring an indoor running track, indoor pool, whirlpool and steam room; the world-class Ten Spa at the Fort Garry, complete with Canada's only co-ed hamam (Turkish bath); and complimentary yoga at Yoga Public, which offers more than 100 classes each week. Featuring more than 40,000 square feet of event space, including four stunning ballrooms, the Fort Garry Hotel is a singular location for business events.

The hotel is independently owned and operated by Richard Bel and Ida Albo, who took over ownership in 1992. It is a major player in the very competitive downtown Winnipeg market, and relies on events and conferences as the cornerstone of its business. While the hotel caters mainly to the local market and business travelers, Manitoba enjoys a brief winter tourist season when people come from all over the world to see polar bears. Since 2004, Fort Garry has been the host hotel for Great Canadian Travel Company and Natural Habitat Adventures— tour operators that offer polar bear and Arctic wildlife excursions.

Challenges: An Energy Intensive, Complex Heritage Building

Fort Garry Hotel was facing pressure from rising energy costs, increased regulation, and the need to improve operational efficiency. As a heritage, century-old building, the hotel is very energy intensive and not insulated to modern standards. It was built with steam heat and no air conditioning. It still uses a two-pipe system to heat and cool the guest rooms. The building's layout and infrastructure are complex and hard to manage, with a whole range of existing, aging but functioning equipment, including 14 air handling units—some dating back several decades. There are 11 floors and many mechanical rooms, including several in the basement and first floor, a two-storey mechanical penthouse that serves the Ten Spa, and one that serves the 7th floor which contains 20,000 square feet of event space.

Goal

Reduce complaints and improve energy and operational efficiency.

Story

Schneider Electric partner, BARCOL Controls, Ltd., installed our EcoStruxure Building solution for centralized management and control of hotel systems, along with room controllers, variable frequency drives, and field devices.

Solution

Utilize the most advanced guest room and building management software, systems, and connected devices to add a layer of intelligence to existing systems, enabling automation, visibility, and control of environmental conditions in a complex setting with the help of a certified EcoXpert partner, BARCOL Controls, Ltd.

Results

- 20% reduction in energy consumption
- 25% reduction in maintenance staff hours
- Significant reduction in guest complaints.

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Prior to the installation of the Schneider Electric solution by a BMS certified EcoXpert partner, BARCOL Controls, adjustments to temperature, airflow, and steam in ballrooms, common areas, and the spa were done manually and as a reaction to complaints. There was no centralized view or control of the various mechanical systems in the building. In fact, there were three or more different control systems of varying ages with multiple user interfaces for the maintenance staff to navigate, making operations extremely difficult. In a region that experiences extreme climate variations, complaints were frequent and responses were labor intensive. Logistics of managing this system were a "horror story to operate before BARCOL stepped in" according to owner and general manager, Richard Bel. There was a clear need to improve operational efficiency and reduce labor costs.

"Upgrading the building management system in a world-class facility like the Fort Garry Hotel without disrupting their operations and services poses unique problems in itself. Add the fact that this is a century-old historical facility and it kicks the number of problems up dramatically. The first step for BARCOL Controls was to understand and become intimate with Mr. Bel's Fort Garry Hotel operations and the challenges his staff face running a decades old, vintage HVAC system. Once we had a full grasp on the challenges they faced and with the support of Matthew Ward, we added the product and technology available from Schneider Electric to develop a complete BMS solution. We implemented our solutions over a period of time acceptable to Mr. Bel and his staff with little, if any, system downtime or disruption to his guests' experience. Many additional solutions have become available and are ongoing. I am very proud of our BARCOL Controls project staff and the Schneider Electric support staff to ensure we play our part in Mr. Bel delivering the Fort Garry Hotel experience to his customers," states Bob Donnelly, President and Owner, BARCOL Controls.

Solution Details

Schneider Electric Products

EcoStruxure™ Building Operation Enterprise Server

Automation Servers

EcoStruxure™ Guest Room Expert

EcoStruxure™ Building Expert

SE7000 and SE8000 Room Controllers

SED-DOR wireless door switches

Altivar 61 Variable Frequency Drives

TAC I/A Series MNB Controllers

Field Devices

3rd Party Products

Niagara G3 Enterprise Server

Applications

Building Management

Guest Room Management

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Aside from difficulties managing conditions in the common areas, spa, and ballrooms, guest room management was another area of concern. Today, it demands an exceptional level of manual labor. Heating and cooling is done by individual fan coil units and pneumatic thermostats from the 1960s or 70s. The two-pipe system sends cold water in summer for cooling and hot water in winter for heating the rooms. "There is no visibility or control of temperature in these rooms. Every year, in the shoulder season we have to manually switch to electric heat until the chillers are shut down and hot water starts heating the rooms. All the switchovers are manual and done at the fan coil unit in each room," explains Bel.

Solution

The various upgrades undertaken at the hotel were done in multiple stages. The initial project involved adding building management controls to the air handling systems for the lobby and some of the ballrooms, including the Provencher Room, Palm Lounge, Broadway Room, and Club Room. The primary goals were to improve guest comfort, provide reliability of the control systems, and give the maintenance staff the ability to adjust systems and receive alarms. Several of the ballrooms host high-end weddings every weekend, and business conferences and meetings throughout the week, so proper and consistent controls are very important. Thanks to the Schneider Electric solution and BARCOL, control of public spaces is done automatically with the touch of a button, and can be done remotely when no staff are on site.

Ten Spa

Another area that was automated was Ten Spa, the premier spa in Winnipeg and one of the top spas in Canada. The spa includes two steam rooms (one for men, one for women) and a co-ed Turkish hamam, a marble steam room where guests can receive massage treatments. "The spa was very difficult to operate, with lots of complaints about too much or not enough steam. Schneider Electric and BARCOL completely automated the spa controls so that today there are zero complaints. If there ever is an issue, it's solved with the touch of a button," explains Richard Bel. "This was a very important area for us to improve. When people come for a luxury treatment, they expect a luxury environment. BARCOL did a tremendous job on the spa controls."

"We installed 35 SE8000 Room Controllers throughout the spa as well as a Schneider Electric Automation Server to control and monitor the spa's mechanical systems. This includes a small steam plant, a chiller, and controls for the two steam rooms and the hamam. This was an interesting installation as we are using the Automation Server not only to control normal mechanical systems but also controlling things like fiber optic lighting, heated walls and benches, aroma pumps, cold fog, and tropical mist," explains Al Vincent, Systems Project Coordinator at BARCOL.

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7th Floor Ballrooms

Following the spa upgrades, BARCOL installed building management controls on the 7th floor of the hotel where the two largest ballrooms are, the Crystal Ballroom and the Concert Room. They installed another Automation Sever as well as multiple IO modules. SE8000 Room Controllers were used for the baseboard heat throughout the 7th floor, communicating back to the Automation Server through MPM-GW managers using ZigBee® wireless.

Guest Room Management

The hotel decided to run a pilot program in some of the guest rooms in order to automate and control room conditions. SE8000 Room Controllers, which have displays, temperature sensors, and occupancy sensors, were installed. In these rooms, the switchover between hydronic heat, hydronic cool and electric heat is done automatically. More importantly, these rooms are integrated into Guest Room Expert, Schneider Electric's guest room management system that enables the maintenance team and BARCOL technicians to view room conditions and troubleshoot problems if they arise. The SE8000 Room Controllers provide automatic, occupancy-based temperature control. When guests are away from their rooms, temperature is adjusted to save energy. When guests are in their rooms, they have full control of settings. This solution not only saves energy, but according to Mr. Bel, it has improved guest satisfaction. "In fact, we rarely have complaints to adjust room temperatures. Everything is done automatically," he explains.

Plans to install Room Controllers in the remaining guest rooms are underway, which will significantly reduce manual labor currently required for maintenance of temperature control in the guest rooms.

Behind the Scenes

Building management controls were also added to the majority of the hotel support services HVAC systems like sub-basement ventilation, laundry ventilation, dryer exhaust systems, kitchen ventilation system, kosher kitchen ventilation system, proofing room, bakery ventilation system, cooling plant, heating plant, domestic water controls, etc. This included several TAC I/A Series MNB Controllers, Altivar 61 VFDs, and field devices. The primary goals were reliability, adjustability, and alarms for the maintenance staff. With so many systems spread throughout the building, alarms on the building management system are crucial for the maintenance staff to know when something isn't right.

Initially most of the systems were running 24/7. All of the controls installed by BARCOL included occupancy schedules to shut the units down for energy savings, outdoor air temperature reset schedules on the boilers and chillers, and programming for economizer functions and CO2 demand-based ventilation.

The largest installation challenges came for BARCOR while installing the zone thermostats. The majority of the building interior is plaster/brick/granite construction and the majority of the existing zone controls were pneumatic with the lines plastered into the wall. This left no easy way to pull wires and presented some substantial challenges for BARCOL installers who had to crawl through some tight interstitial spaces under floors, between walls, etc. In many cases, the Schneider Electric wireless option was chosen, using a combination of SE8000 Room Controllers and MPM-GW managers.

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— Richard Bel,
Owner/Operator

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"We've been with BARCOL for 10 years. I have worked with a number of building control companies over the years and without a doubt, BARCOL and the Schneider Electric system are far and ahead of the other companies I've used," stated Mr. Bel. "We now have a modern hotel in a historic building; an old system with new brains"

— *Richard Bel,*
Owner/Operator

Results

The Schneider Electric solution was capable of seamlessly integrating with the hotel's existing equipment and systems, eliminating the need to rip out and replace mechanical infrastructure, and thereby providing CAPEX savings. The various, incremental upgrades have transformed the hotel's building systems' performance. Maintenance staff have complete visibility and control of systems through EcoStruxure™ Building Operation dashboards and reports. They can see exactly what's going on anywhere in the building at any time, greatly improving situational awareness and response times. Staff can even troubleshoot and fix issues remotely when no one is onsite.

Richard Bel estimates energy consumption to be reduced by 20%, and maintenance staff time reduced by 25%. Guest complaints have all but vanished.

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Schneider Electric's EcoXpert Partner Program pairs the world's leading technology providers with customers around the globe to cultivate collaboration, connect expertise, and deliver best-in-class services and solutions. Learn more at schneider-electric.com/ecoxpert.
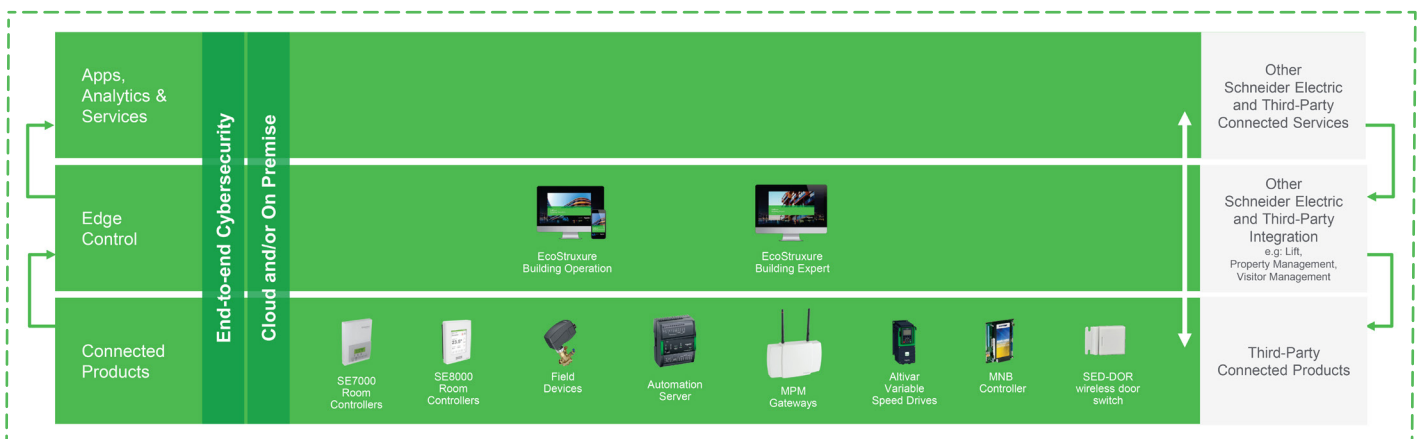
EcoStruxure™ for Hotels Architecture

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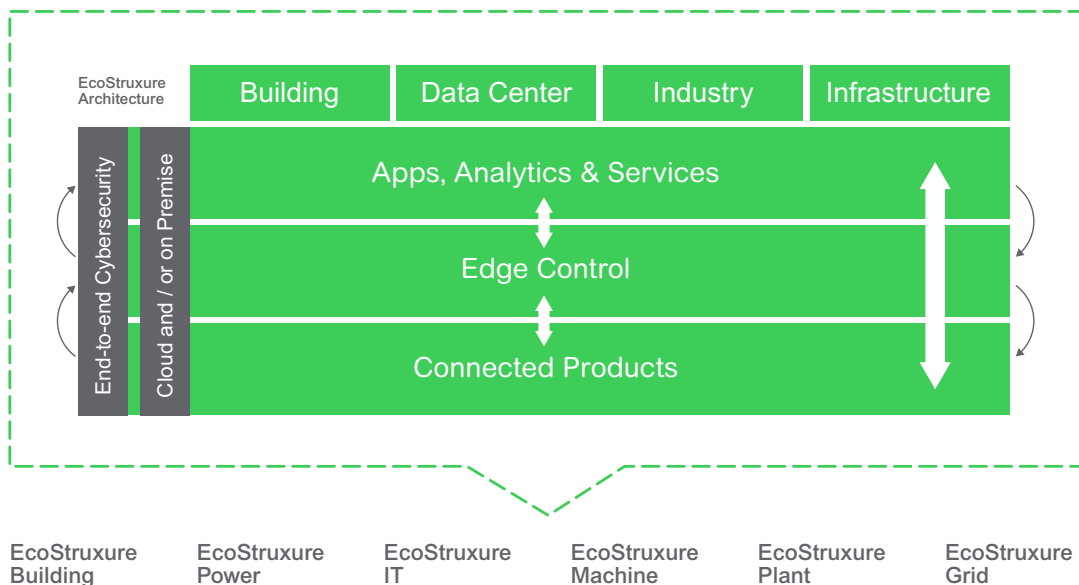
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IoT-enabled solutions that drive operational and energy efficiency

EcoStruxure is Schneider Electric's open, interoperable, IoT-enabled system architecture and platform.

EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers.

EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level including Connected Products, Edge Control, and Apps, Analytics & Services. EcoStruxure has been deployed in 450,000+ installations, with the support of 9,000 system integrators, connecting over 1 billion devices.

One EcoStruxure architecture, serving 4 End Markets with 6 Domains of Expertise

| EcoStruxure Architecture | Building | Data Center | Industry | Infrastructure |

End-to-end Cybersecurity · Cloud and / or on Premise

Apps, Analytics & Services

Edge Control

Connected Products

EcoStruxure Building · EcoStruxure Power · EcoStruxure IT · EcoStruxure Machine · EcoStruxure Plant · EcoStruxure Grid

Connected Products

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include breakers, drives, UPSs, relays, sensors, and more. Devices with embedded intelligence drive better decision-making throughout operations.

Edge Control

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

Apps, Analytics & Services

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid environments. EcoStruxure enables a breadth of agnostic Applications, Analytics, & Services for seamless enterprise integration.

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