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PALACE ROYAL Hotel

Located in the heart of Old Quebec, the four-star Palace Royal hotel is one of seven establishments in the Les Hôtels JARO group. The hotel, inaugurated in 2000, measures 27,500 m² (90,223 sq. ft) and has 234 rooms, a conference site with eight meeting rooms, and a beautiful indoor garden with a pool.

The hotel's energy costs per room had become the highest in the chain. In search of a solution, the owner called on energy efficiency specialists from Poly-Énergie and Génécór, who turned to Regulvar for its building automation expertise.

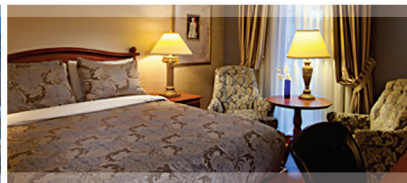
The building's high energy consumption was due to several factors:

- Year-long air conditioning in the rooms looking over the pool (half of the rooms in the hotel) due to the high temperature in the atrium (27°C);
- Oversized equipment;
- Significant heat loss;
- The absence of an adequate automatic control system.

The chosen solution relies mainly on more powerful equipment and optimized functionality, and focuses primarily on heat recovery and transfer.

With regard to building mechanics, the main upgrade involved adding a multistack modular chiller linked to indirect water

The JARO group **invested** in **energy efficiency** and it **paid off!**



heaters that were able to meet virtually all of the hotel's domestic hot water needs. In addition, two of the three boilers and one of the two gas water heaters were replaced with two condensation boilers. Modulating valves were also installed to obtain the temperature differential in the hot and chilled water systems needed for reduced flow.

With regard to control, Regulvar equipped all the devices with digital controllers. Twelve variable-speed drives were attached to pumps and fans for more precise control. Flow meters attached to the centralization system are used to monitor the supply of drinking water from the water tower and the building's consumption of domestic hot water in order to determine need and operational capacity. Finally, the centralized control system was modified to better manage all the components of the HVAC system from a computer equipped with ORCAview software.

These combined changes helped reduce the building's natural gas consumption by 64.4% and electricity consumption by 20%, resulting in annual savings of approximately \$165,000. A remarkable accomplishment made possible by relying on expertise from different sources, and ultimately inspiring the owner to begin renovating the HVAC systems of three other hotels in the chain.



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Capitale Hélicoptère

Wireless technology reaches new heights

Capitale Hélicoptère offers helicopter piloting services, training and maintenance across Canada. With a fleet of 25 helicopters, the company operates out of a new building located at the Quebec City Airport.

The building, which was built in 2012 and is 7,897 m² (85,000 sq. ft.) in size, has office space measuring 1,394 m² (15,000 sq. ft.) and a hangar measuring 6,503 m² (70,000 sq. ft.) with a 15-metre-high ceiling (50 feet).

Regulvar's mandate for this customer involved implementing a building automation system designed for the centralized control of HVAC systems, including the geothermal loop and indoor and outdoor lighting.

With regard to lighting control, Regulvar's solution uses EnOcean wireless control devices. Regulvar's team installed and commissioned a total of 125 wireless control lighting relays, 100 battery-free wireless wall switches, 20 wireless motion sensors and 10 Ethernet controllers required to integrate wireless technology via the Delta Controls wired building automation system.



All the devices are connected to the building automation system, making it possible to control the lighting manually with wall switches and also program various functions. For instance, the lights are turned off automatically at the end of the day in each area in accordance with a predetermined schedule and order and based on motion sensor data.

This technology adapts well to the needs of the hangar given the ceiling height (50 feet), the extensive surface area and the fact that the space is a vast open area.

The technology is a practical solution for the entire building in that it significantly reduces the amount of wiring used, decreases reliance on electrical ducts and simplifies installation. This results in equipment and installation savings and also improves the visual aspect of the space.

This project is a very good example of how to take full advantage of battery-free wireless technology.

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