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BUILDING AUTOMATION
making headway in the shipbuilding industry

Although building automation is generally associated with real estate, it is extremely useful for the shipbuilding industry. The ever-present humidity, frequent changes in temperature and bad weather experienced on a boat make it very complicated to maintain comfortable environmental conditions that are appropriate for the activities taking place. Thanks to its expertise, Regulvar it can provide systems that meet the needs, standards and requirements common to this industry. Following are three projects to which Regulvar has made a positive contribution.

Le Grand-Cru
A restaurant yacht

The owner of the famous Orford Express tourist train, André L'Espérance, launched his latest creation on May 20, 2011—a luxury restaurant yacht named ***Le Grand Cru***. The idea of offering gourmet cruises on Lake Memphremagog was a valid and attainable one, but it became clear that implementing the project would be challenging. In fact, given that it would have been impossible to transport a boat of that size to its destination, workers had to build it on site and manage a complex boat launch.

Luxury and comfort await the 172 passengers of this 41-metre catamaran weighing 165 tonnes. As they admire the view of the lake, they can also enjoy the unique and stunning interior design: an open-area concept, a ceiling speckled with crystals, woodwork decorated with marble, stainless steel and chrome, a glass wine cellar, 3D television sets that can be viewed through the bathroom mirrors, and fire-resistant wood floors.

But *Le Grand Cru* is not just a pretty face. Passenger comfort, efficient devices and the boat's ability to survive the winter are all ensured by an automatic control system provided by Regulvar.

The system controls all the heating, ventilation and air conditioning (HVAC) devices, which include an innovative boiler room that operates based on a process akin to geothermal energy: hydrothermal energy. Two ventilation systems—one on the port side and one on the starboard side of the vessel—each have a heat pump, which is coupled with a heat exchanger and collects the energy stored in the water of the lake to provide heating or air conditioning for the boat. The water from Lake Memphremagog that circulates through the exchanger in an open-loop system becomes a constant heat or cold source based on what is required.

The operations are orchestrated by a digital controller that communicates with the temperature sensors hidden in the woodwork. A touch screen located in the wheelhouse helps the captain adjust the set points and stay informed of current conditions as well as potential problems.

During the winter, *Le Grand Cru* will be docked and connected to the electricity grid. The building automation system will control two electric coils located in the ventilation ducts, which will take over from the heat pumps to provide minimal heat and avoid any damage related to low temperatures.

The solutions implemented by Regulvar, in addition to preserving passenger comfort, will certainly contribute to the long life of this superb cruise boat.

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The *Des Groseilliers*
An icebreaker

Owned by the Canadian Coast Guard, the ***NGCC Des Groseilliers*** is an icebreaker built in 1982. In the winter, it escorts vessels in the Gulf of St. Lawrence, on the St. Lawrence River and on the Saguenay River. In the summer, it surveys the Canadian Arctic. It can carry enough fuel to travel a surprising 25,000 nautical miles[1] and sufficient provisions and potable water for 140 days.

Given its long missions and the difficult and variable atmospheric conditions in which it patrols, the *Des Groseilliers* would like to be able to provide its crew of 35 with a comfortable working and living space, which has not always been possible.

Originally, the components of the heating, ventilation and air conditioning (HVAC) system were controlled manually or mechanically, and it was both arduous and time-consuming to maintain appropriate humidity level's and temperature. After pneumatic devices also failed to achieve the desired results, the Coast Guard turned to Regulvar in 2002 to solve the problems using centralization and digital control.

The Regulvar team rose to a dual challenge—it carried out its work on a vessel that was operating 24 hours a day and it ensured that the HVAC system was functioning smoothly. Today, four controllers manage close to 100 points and orchestrate the work of the motorized dampers, chillers, motorized valves, steam coils and humidifiers. The *Des Groseilliers* crew can now break up ice and stay warm in the process.

The *Coriolis II*
A research vessel

Built in 1990 for the Canadian Coast Guard, the *NGCC John Jacobson* was used for research and sea rescue purposes. Sold in 2001 to a consortium made up of Université du Québec à Rimouski (UQAR), Université Laval, Université du Québec à Montréal (UQAM) and McGill University, it was transformed into a university oceanographic research vessel and named ***Coriolis II***. Since that time, it has been in use by the Institut des sciences de la mer de Rimouski (ISMER).

The *Coriolis II* contains a wide array of sophisticated research instruments and has a crew of 24, including 14 researchers; it is therefore important to ensure environmental conditions that support the work as well as the condition of the equipment. During recent renovations, Regulvar was therefore hired to integrate a digital control system in the vessel for the HVAC equipment.

In the wheelhouse, a controller associated with a thermostat and a touch screen manages the actions of a roof air conditioning unit, heating coils, and electric dampers and baseboards, whereas on the deck and in the cabins, the controller is linked to the air conditioning unit that acts based on the information it receives from return sensors as well as CO_2 sensors.

In short, the system manages a total of 46 points and is fully connected to the client's Ethernet network, which means the vessel's mechanic can access it from a computer—very practical when at sea.

[1] One nautical mile is equivalent to 1852 m.

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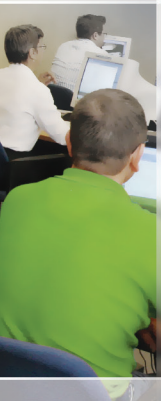

UPCOMING TRAINING

Laval (French) :

ORCAVIEW 3.33
intermediate level
September 12•13

ORCAVIEW 3.33
advanced level
September 14•15

GCL + PROGRAMMING
September 19•20•21

CREATION OF GRAPHIC INTERFACE
September 28•29

Ottawa (English) :

ORCAVIEW 3.33
intermediate level
October 3•4

ORCAVIEW 3.33
advanced level
October 5•6

GCL + PROGRAMMING
October 11•12•13

CREATION OF GRAPHIC INTERFACE
Depending on enrollment

For more information,
visit our Website
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Did you know?

Regulvar is now a value added partner and installer of **SkySpark**, an analysis and diagnostic software used for energy management and optimization of building automation systems.