

## CRITICAL ENVIRONMENTS **Building automation** clears the air!

Building automation systems (BAS) provide well-known benefits in terms of comfort and energy savings; they are also particularly useful for managing air quality in critical environments. For example, automation systems are used in laboratories, hospitals and a variety of manufacturing plants (high-tech products, pharmaceuticals and food) in order to ensure the safety of occupants and prevent contamination.

Depending on the situation, the objective will be either to:

- **prevent contaminants from escaping** a given environment, such as a chemical manufacturing plant or an isolation room for a contagious patient, in order to avoid the spread of potentially hazardous substances; or to
- **prevent the infiltration of contaminants** into clean rooms, where products must not come into contact with substances such as dust (microelectronics) or microbes (food and pharmaceutical industries, hospital settings).

The key factor in both instances is air pressure, which will be negative in the first instance and positive in the second.

### **Striking a balance: a complex task**

Reaching and maintaining an optimal state is a complex process. The air in a building is never static; its behaviour is influenced by factors such as the influx of outside air, the exhaust of stale air, the opening or closing of doors, the movement of the building's occupants, the opening of fume hood sashes, etc.

A building automation strategy can intelligently orchestrate the functioning of devices such as controllers; fume hood monitors; anemometers; air flow control valves; sash position sensors; pressure, temperature and humidity sensors; and motion sensors.

### **A unique solution at Regulvar**

Regulvar's laboratory solution is not only adapted to each project and perfectly integrated into the existing building automation system; it is also the only solution to combine the precision of pressure-based control with the reaction speed and stability of flow-based control. Reliable and energy-efficient, this system offers numerous benefits:

- Range of proven products
- 100% BACnet system
- Integration of third-party products
- Modifiable programming
- Closed-loop system with feedback
- Real-time monitoring of air pressure and air velocity (fume hoods)

## Unique projects call for unique solutions



### Getting everything to work together

The **University of Ottawa** is attended by over 40,000 students who circulate in 30 buildings spread over 42.5 hectares. The various faculties, including that of health sciences, share several hundred research and teaching laboratories, which have been upgraded over the past 15 years. After testing the solutions of other suppliers, the university called on Regulvar to provide an energy-efficient, versatile, reliable and high-tech solution.

Considering the wide variety of equipment and systems in place, the solution had to respond to the unique needs of each lab. Implementing a cohesive overall strategy represented quite a challenge. Regulvar proceeded to correct the existing system by eliminating overlapping equipment and software, bringing all control elements onto one network, and seamlessly connecting all of the components to the campus building automation system.

Our expertise in integrating diverse technologies allowed us to give the University of Ottawa optimal control of its laboratories.



### Responding to highly specialized needs

**SNOLAB** is a science laboratory where researchers conduct studies on neutrinos and dark matter physics two kilometres below the ground, in the Vale Inco Creighton mine, located near Sudbury, Ontario.

The conditions in these 5,000 square metres of underground clean space are quite unique: the air is dusty and in short supply; the humidity level is high; and the heat of the rock is intense—approximately 42°C. The adequate control of ventilation and air conditioning systems is essential to this project. It is not only vital for the researchers, but also for the work they are carrying out. Sufficiently cold temperatures are required for their experiments; all dust must be eliminated; optimal air pressure for each area must be maintained; and air quality must be monitored.

Regulvar has implemented a solution that applies complex algorithms to accurately control these parameters. All of the systems, filters, and air and water intakes are carefully monitored and connected to alarms.

This precision allows the researchers to carry out their projects in this high-tech lab with peace of mind.

*Serving our clients better*

Laboratory or clean room managers can count on Regulvar to help them:

- comply with existing standards
- ensure personal safety
- protect materials
- maintain productivity
- achieve energy savings

For more information on our laboratory control solutions, contact one of our specialists:

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## UPCOMING TRAINING

	In Laval in French	In Ottawa in English
<b>ORCAVIEW Beginner</b>	Upon request	Upon request
<b>ORCAVIEW Intermediate</b>	February 2 • 3 2015	October 7 • 8 2014
<b>ORCAVIEW Advanced</b>	February 4 • 5 2015	October 9 • 10 2014
<b>GCL PROGRAMMING</b>	February 9 • 10 • 11 2015	October 15 • 16 • 17 2014
<b>CREATING GRAPHICAL INTERFACES</b>	February 17 • 18 2015	October 22 • 23 2014
<b>INTRODUCTION TO WIRELESS CONTROL</b>	February 24 • 25 2015	October 29 • 30 2014

For more information, visit our Website

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