



CanmetENERGY

PALAIS DES CONGRÈS DE MONTRÉAL: A MORE INTELLIGENT AND EFFICIENT BUILDING BECAUSE OF DABO™



The Palais des congrès de Montréal convention centre is acquiring a reputation as a pioneer by becoming one of the first buildings in Canada to implement innovative continuous building optimization practices.

Located in the very heart of downtown, the Palais des congrès de Montréal can accommodate exhibitions, conferences and various block-buster events. The 130,000-m² building must satisfy a variety of requirements because its occupancy rate varies considerably, depending on the time of year and the events being held.

Main characteristics of the mechanical and electrical systems

- Peak electrical demand: 6-MW
- Heating plant capacity: 18,000-kW
- Cooling plant capacity: 3,400-tons
- Ventilation air requirements: 200,000 L/s (424,000 cfm)
- 325 Air handling units
- 4,740 control points
- Annual energy bill: \$2 million

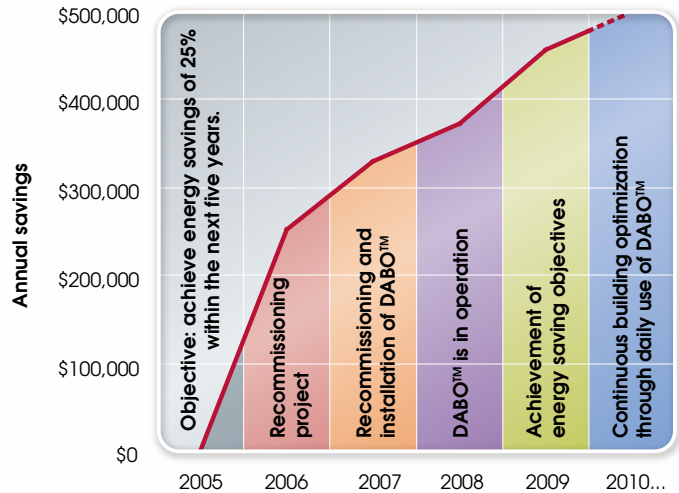




FOR GREATER EFFICIENCY

As part of its overall energy efficiency plan, the Palais des congrès de Montréal has implemented DABO™ in order to:

- Ensure persistence of energy savings after implementing energy efficiency measures
- Identify new energy-saving opportunities
- Provide building operating staff with a continuous optimization tool
- Diagnose problems with the building operation, thermal comfort and indoor air quality more quickly.



Main Steps of the Energy Efficiency Plan



FOR GREATER INTELLIGENCE

Daily Analysis of Individual Components

At the Palais des congrès de Montréal, regular consulting of DABO™ screens in 2008–2009 **resulted in the detection of 211 faults** that would have been difficult to detect otherwise. For example:

- Inverted connections on a three-way valve installed on an heat recovery loop
- Unnecessary start-up of several HVAC systems during unoccupied periods
- Leaking heating and chilled water valves
- Defective or undersized humidifiers
- Decalibrated sensors
- Simultaneous heating and cooling

Optimization of Systems over Time

By consulting historical data and analyses provided by DABO™, Palais des congrès de Montréal employees and the Consulting Engineers Pageau Morel **optimized most of the building's mechanical and electrical components, such as:**

107,000-L/s outdoor air supply system with:

- 22 supply/exhaust systems
- 30 HVAC systems (H-type)
- 50 VAV terminal boxes

Cooling and heating systems:

- Cooling and heating plants
- Distribution systems

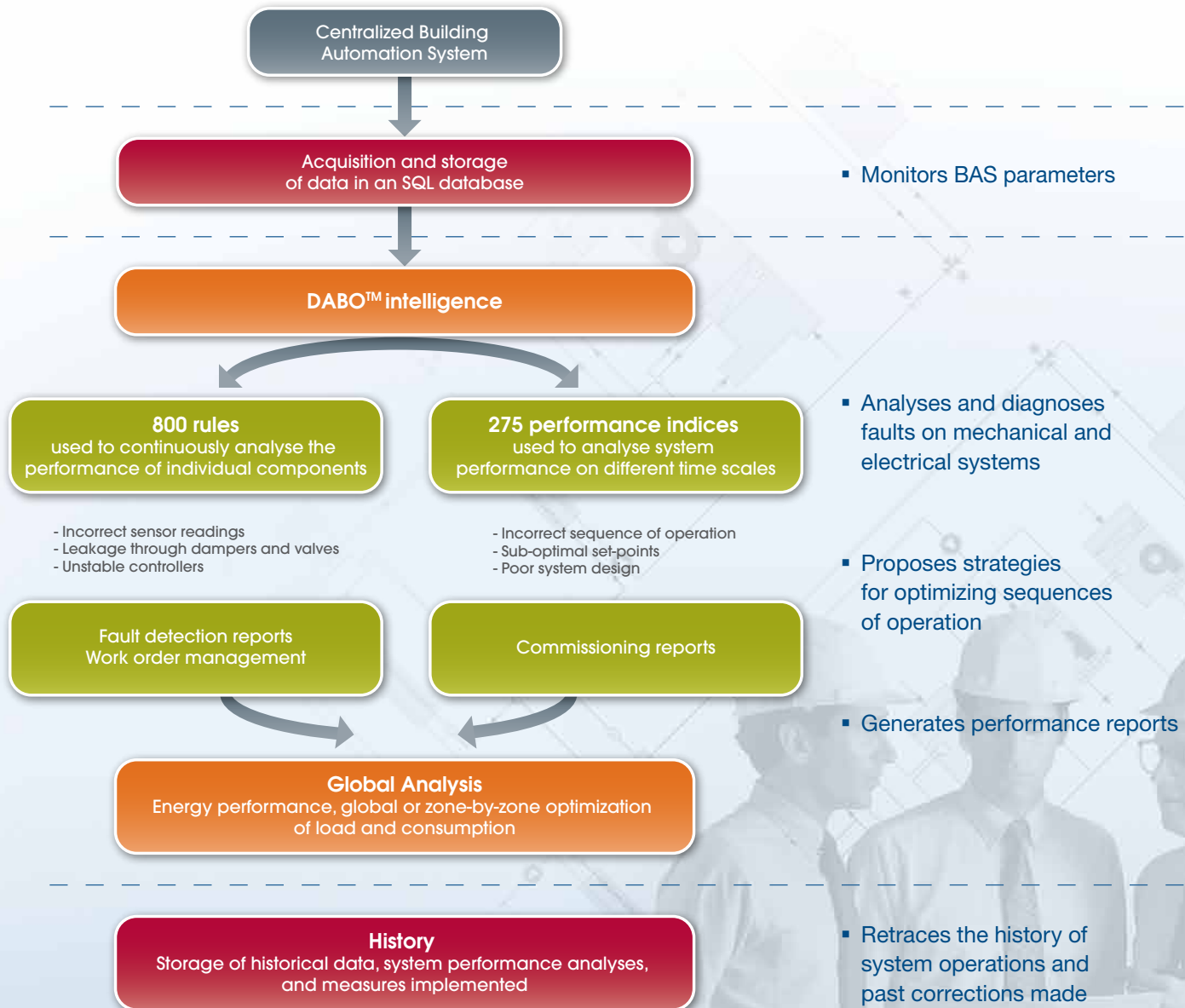


A CONTINUOUS OPTIMIZATION TOOL

DABO™ is a continuous building optimization software program. It complements the building automation system (BAS) to which it is connected: **DABO™ adds intelligence and memory to the BAS.**

It continually gathers and analyses data from the BAS and generates a comprehensive documentation on building operations.

To improve daily performance in operations and maintenance, the building managers and operating staff refer to DABO™. Its advanced functions make the following possible:



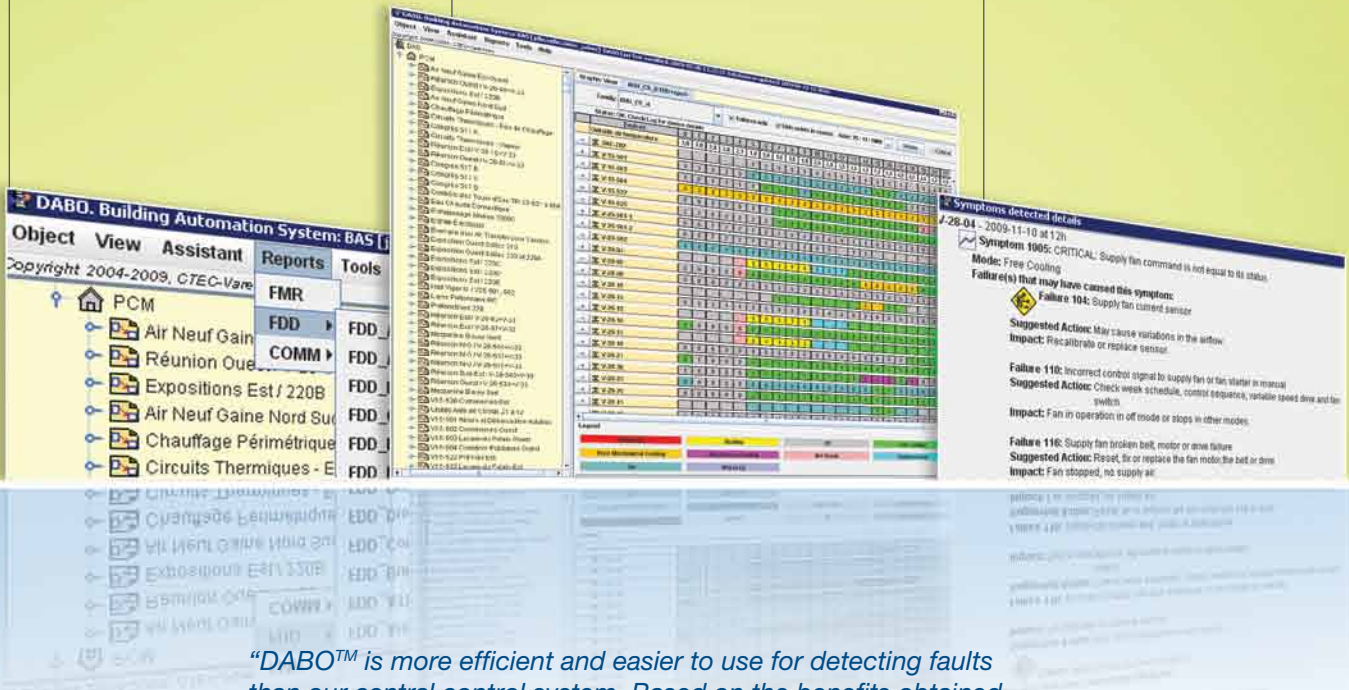


TYPICAL DABO™ SCREENS

Selection from the main screen - fault detection and diagnostics module

Overview of faults detected through the day on each system

Diagnosis: Probable causes and suggested solutions for a detected fault



“DABO™ is more efficient and easier to use for detecting faults than our central control system. Based on the benefits obtained thus far, we want to continue using DABO™ in our continuous optimization activities.”

Palais des congrès de Montréal

“DABO™ is a useful tool for modernizing equipment because it helps to accurately determine loads, utilization levels and potential energy savings. It is proving to be an invaluable tool for facility management consultants.”

Pageau Morel Consulting Engineers