Continental Automated
Buildings Association

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North America's Home & Building Automation Association

1173 Cyrville Road, Suite 210
Ottawa, ON K1J 7S6

Tel: 1. 613.686.1814
Fax: 1.613.744.7833
US/Canada: 1.888.798.CABA

Web: www.caba.org
E-mail: caba@caba.org

CABA helps Government of Canada launch new and innovative technology to green federal buildings

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The Honourable Christian Paradis, Minister of Public Works and Government Services, is pleased to announce the launch of the Intelligent Buildings project, a prototype business model that will monitor and control mechanical, heating and lighting systems in Government of Canada buildings.

This prototype, a proof of concept, will incorporate new technology into the existing automated systems of two Government of Canada facilities. If successful, the new technology could reduce the annual energy costs of certain federal buildings by up to 20 percent.

“This Government is investing in cutting edge technology to reduce the footprint of our federal buildings,” said Minister Paradis. “We are working to find new and innovative ways to improve how energy within federal buildings is managed and thus reduce our overall energy consumption.”

“We are actively working with PWGSC to make this project a reality,” said Ron Zimmer, Chief Executive Officer of the Continental Automated Buildings Association. “As contemporary leaders, we have a duty to ensure responsible management of the resources at our disposal. It just makes good environmental sense.”

Current statistics indicate that the Government of Canada spends $68 million a year on energy for the 350 federal buildings owned by PWGSC. Given the number of government buildings across the country, implementing this large-scale initiative would allow PWGSC to reduce its overall energy consumption and significantly improve its environmental performance.

For more information on the Intelligent Buildings project and how the Government of Canada is working to green its operations, please consult the backgrounder.

About CABA
The Continental Automated Buildings Association (CABA) is a leading industry association that promotes advanced technologies in homes and buildings in North America. More information is available at http://www.caba.org/.

Media Contact:

Rawlson O'Neil King
Communications Director, CABA
king@caba.org
613.686.1814 x225
888.798.CABA (2222)

Backgrounder

Increasing energy efficiency using intelligent building technology

Current statistics indicate that the Government of Canada (GC) spends an estimated $68 million on energy for the 350 federal buildings owned by Public Works and Government Services Canada (PWGSC).

Effective management of utilities, including energy, is critical. Utility costs on average constitute 30 percent of all building operating costs and are the largest variable expenditure in a building's operation and maintenance budget.

The Intelligent Buildings proof of concept—a prototype of a business model—was born out of the increasing need within the GC to improve how it manages its environmental resources. Specifically, this project focuses on improving the energy efficiency of federal buildings. The proof of concept is intended to test PWGSC's capacity to incorporate new energy management technology into existing automated systems.

Energy efficiencies can be realized by providing direct connectivity to the Building Automation Systems (BAS) and enabling access to systems data for PWGSC professionals. By analyzing available data, they will be able to improve overall building operations and will be better equipped to respond to energy demands. The ability to integrate buildings within a department's portfolio could also help achieve additional efficiencies. Given the size of the GC's portfolio, this would allow PWGSC to significantly impact energy consumption on a national scale. Energy management systems and BASs are now replacing older, less efficient systems.

PWGSC has already made some progress toward this goal by applying the standards of the Building Owners and Managers Association (BOMA) framework and the Leadership in Energy and Environmental Design (LEED) program. To date, PWGSC assessed 249 buildings using BOMA's "Go Green Plus" framework. Thus far, 116 buildings have been certified "green" by BOMA, and 4 buildings are now LEED certified.

Integrating building automation technology into existing control systems would result in an intelligent network with the capacity to monitor and control the mechanical and lighting systems in GC buildings, as well as their associated energy requirements.

Building Automation Systems

BASs are mainly used in commercial heating, ventilation and air condition (HVAC) control systems, as well as energy management system applications. A BAS is comprised of mechanical and electrical systems and equipment which is connected to microprocessors that communicate with each other. Computers, along with controllers in BASs can be networked through the Internet or serve as stand-alone systems for the local controller network only. BAS controllers do not require computers to operate, as they are designed to operate in a stand-alone fashion with the equipment they are assigned to control. With a few exceptions, BASs have their own program and are able to communicate with other building automation controllers. This is especially important if a network should fail, in which case the system will continue to function.

These automation systems:

- allow the owner to set up operation schedules for the equipment and lighting systems so that energy savings can be realized when the building or spaces in the building are unoccupied;
- have the ability to monitor energy usage, including meter electric, gas, water, steam, hot water, chilled water, and fuel services;
- offer the ability to send alarms via e-mail, pager or telephone to alert building managers and technicians of developing problems and system failures;
- offer economies based on emission control and calculations;
- include controls such as reset schedules for heating plants, static pressure controls, and other systems where energy savings can be realized;
- can offer load shedding when power companies are at peak demand to cut back on power usage to avoid brown outs;
- allow the owner to cycle items off, such as water heaters or drinking fountains, when not needed; and
- can be set up to bill individual tenants for energy usage.

Buildings involved in the proof of concept

Place du Portage, Phase III

Situated on the Quebec side of the Ottawa River across from the Supreme Court of Canada, Portage III is the home of Public Works and Government Services Canada (PWGSC). The building which is part of the Place du Portage (PdP) complex, opened in 1976. It has nearly 4,500 occupants from 12 different branches and sectors of the Department. In its three towers, there are 98,364 square meters of rentable area, housing not only office space, but a food court, fitness facilities, training centres, a library and exhibit space.

In 2004, the building won the BOMA Ottawa Earth Award for excellence in environmentally sound office building management.

In 2008-09, PdP III consumed 153,898 Gigajoules (GJ) of energy at a cost of $2 million. Currently, PdP III consumes energy at a rate of 1.1 GJ/square metre (sq m), or below the national average of 1.6 GJ/sq m. With just a 5 percent energy reduction, PdP III can expect to save $100,000 per year, and decrease greenhouse gas emissions by over 1,068,425 kg/yr.

Sir William Logan Building

The Sir William Logan Building is located at 580 Booth Street in Ottawa near Dow's Lake. Part of the Booth Street complex, the building was constructed in 1974 and serves as the national headquarters for Natural Resources Canada (NRCan). The building is a high-rise office structure comprised of 21 floors above ground and a single basement level, with 33,716 square meters of rentable area. It accommodates approximately 1,600 occupants. The building is linked at the basement and ground levels to the adjacent Administration Building at 588 Booth Street.

In 2008-09, the facility consumed 42,039 Gigajoules (GJ) of energy at a cost of $1 million. Currently, the asset consumes energy at a rate of 1.1 GJ/sq m, or below the national average of 1.6 GJ/sq m. With just a 5 percent energy reduction, this facility can expect to save $50,000 per year along, and decrease greenhouse gas emissions by over 258,532 kg/yr.