

# C A S E S T U D Y

Enermodal  
Engineering  
Kitchener, ON

## Sustainable engineering firm selects WattStopper for LEED Platinum headquarters

When Enermodal Engineering set out to build a state-of-the-art LEED Platinum-certified headquarters, the company's design teams specified products they trusted, including WattStopper lighting controls. Enermodal, based in Kitchener, Ontario, is Canada's largest green building consulting firm and has worked on 250 LEED

projects across North America.

Dubbed "A Grander View," Enermodal's striking 22,000 square-foot Kitchener office building is the most energy-efficient in Canada. The bright, airy facility is a narrow building studded with windows and topped with skylights to maximize daylighting, views and natural ventilation. Planted with native species, the site overlooks the Grand River.

### Lighting and controls

Enermodal electrical designers carefully selected control strategies best suited to different spaces throughout the facility, taking advantage of every

opportunity to save energy while also considering occupant comfort and safety.

Switching photosensors control compact fluorescent pendants in airy corridors on three floors adjacent to a central atrium and daylit office areas, and this lighting remains off most of the time.

Designers layered control strategies in the building's private and open offices. Low wattage direct/

indirect lighting fixtures with T8 lamps and dimming ballasts include integral daylighting sensors that automatically adjust the output of the lamps based on the amount of daylight in each space. The daylighting controls are integrated with passive infrared (PIR) occupancy sensors, which are in turn integrated with HVAC

controls for maximum efficiency.

Corner-mounted occupancy sensors automatically turn the office lighting on to the level established by the daylighting sensors whenever the spaces are occupied. Each private office includes a switch for



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### Design and construction team:

Robertson Simmons Architects, Inc.

Enermodal Engineering, mechanical and electrical engineering, LEED consultant, commissioning agent

Melloul Blamey Construction

Harold Stecho Electric

### WattStopper lighting controls used:

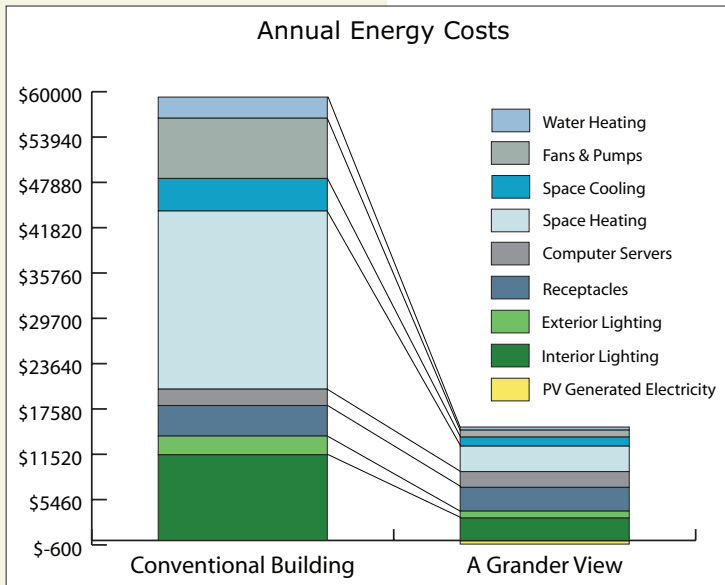
CX-100 and PW-100 series occupancy sensors; TS-400 series time switches; LS-102 photosensors; BZ series power packs

**WattStopper**<sup>®</sup>

www.wattstopper.com 800.879.8585



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Digital time switches in stairwells and mechanical rooms provide manual control, but also prevent lighting from being left on accidentally. Enermodal's commissioning team programmed the on times for one hour and enabled a blink warning to signal an impending time out, allowing occupants to extend the on time if needed. The stairwell time switches are wired for three-way operation, so occupants can turn lighting on or off from each landing.



### Selecting and installing WattStopper controls

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manual control that enables the occupant to turn the lights off. Most occupancy sensor time delays are set for 15 or 20 minutes. Heating and cooling, controlled via isolated relay contacts on the sensors, is scaled back when spaces are unoccupied.

Low voltage PIR wall switch occupancy sensors control lighting in the building's private restrooms, and auxiliary contacts control exhaust fans.

other projects with both the products and the service team. The designers noted, "When we had questions about how to use the products, WattStopper representatives were always available to help."

Enermodal's commissioning department worked with the electrician who installed the occupancy sensors and the HVAC controls installer to facilitate interconnecting the two systems. Following commissioning, the controls all operated as expected, and have required only minor adjustments including increasing the sensitivity in several areas. All of the occupants are now comfortable in their new offices.

### Building performance

Enermodal President Stephen Carpenter says, "Our metered LPD is just 4.6W/m<sup>2</sup> (0.43W/ft<sup>2</sup>). The calculations for LEED documented a power reduction of 33% below ASHRAE 90.1-2004. The occupancy sensor control allowance increased that reduction to 39.6%." Overall energy use, tracked throughout the facility's first year of operation, is 82% less than conventional office buildings in Canada.

All of the building's systems, from insulation and shading to heat recovery systems to water conservation measures, contribute to its impressive performance. A Grander View is expected to achieve the first triple LEED Platinum certification in North America; it is already LEED-NC- and -CI-certified, and is a candidate for LEED-EB: O&M certification.