FOCUS ON GREEN

University of Calgary embraces GREEN UP

Benchmark building performance on campus helps prioritize key areas for improvements

by Ron Lemaire

The Canada Green Building Council (CaGBC) is the leading national industry organization advancing green building practices for livable communities. It represents more than 2,100 member organizations involved in the design, construction and operation of buildings. The council owns the Canadian licence for LEED, and implements the LEED® Green Building Rating System in Canada. For more information on the CaGBC and its performance benchmarking program, visit www.cagbc.org.

GREEN UP is a national building performance benchmarking program of the Canada Green Building Council (CaGBC). GREEN UP provides building owners and operators a tool to track energy and water usage, as well as green house gas emissions, in their facilities. What is unique about the program is that whole-building performance can be benchmarked against similar buildings from across the country and optional building performance audits allow individual building systems, such as lighting, fans and boilers, to be benchmarked. This data can be used to guide continuous improvements, leading towards significant greenhouse gas reductions and significant cost savings to the owner.

Following a successful pilot phase in 2009, the CaGBC launched GREEN UP for commercial office buildings, K-12 schools and for government and utility company administration buildings. Since the launch, program participants within the various building sectors have experienced combined overall savings of over $7 million dollars and a green-house emission (CO2e) reduction of 26,498 tonnes. The University of Calgary (U of C) will be the first Canadian university to participate in the Canada Green Building Council's (CaGBC) GREEN UP Program, and will work to leverage the tool to improve efficiencies, experience overall cost savings and reduce their emissions.

Changing market – understanding how your building performs!

With ever-increasing numbers of building owners engaging in this initiative and reporting their energy and water use, the creation of the CaGBC building-performance database and information system for the entire building sector will support the questions and the need for market data to better support the changing market around sustainable construction. In short, the GREEN UP Program will allow building owners and operators to report on: energy and emissions, conservation potential and trends, performance and design standards. It will allow building operators and owners to demonstrate how their buildings are actually performing and where the opportunities lie for cost savings and reduced environmental impact.

An example of this market shift can be seen in Alberta. Thirty-five buildings on the U of C main campus have enrolled in CaGBC's GREEN UP Program. The data collected from these buildings will be normalized for weather and included in a national database with information from similar building types. The GREEN UP database will allow the U of C to view how their buildings track in relation to similar buildings across Canada. In addition, a building performance audit will be conducted in all 35 buildings. Comparing the performance of building systems against the national database helps building operators to prioritize key areas for improvements and to establish relevant performance targets.

The U of C recently released a Climate Action Plan confirming initiatives aimed at reducing greenhouse gas emissions 45 percent by 2015 and 80 percent by 2050. "GREEN UP is one of the tools the U of C is using to advance our multi-year energy performance initiative (EPI) aimed at reducing GHG emissions and operating costs in existing buildings," says Joanne Perdue, director of Sustainability for the U of C. "Based on a pilot project with the CaGBC we found that the systems level data and ability to benchmark performance helps us identify and prioritize energy conservation opportunities deeper within our building systems; we're now scaling this up to include 35 buildings."

Next year the U of C will realize annual emission reductions of 80,000 metric tonnes through the use of combined heat and power technology which will produce both power and heat on campus. Together with driving down energy demand in existing buildings, the U of C is on track to meet their 2015 emission reduction goal.

"Improving the energy and water efficiencies within existing buildings is essential to reducing Canada's carbon footprint. Other Canadian universities will surely follow this example when they understand the potential savings for their institutions," says Thomas Mueller, president and CEO of the CaGBC. "Since 2008 GREEN UP has verified energy savings in GREEN UP buildings ranging from 2 to 8 percent over a three year period and an overall reduction of green-house gas emission of well over 11,000 tonnes, demonstrating program success."

As Vice President, Market Development with the CaGBC, **Ron Lemaire,** plays a key role in strategically advancing the council's mission and goals in the marketplace. He oversees the development and implementation of comprehensive strategies for incorporating sustainable considerations within organizational development plans for the overall growth of the green building industry.