



Excellence in Sustainability a Priority at UCalgary

By Clara Deacon

At the University of Calgary (UCalgary), sustainability is a core value. An institution comprising 30,000 students, 1,800 academic staff, and 3,200 nonacademic staff, UCalgary has a commitment to sustainability that is inherent in its longstanding and unwavering commitment to excellence and leadership.

In 2016, UCalgary launched the Institutional Sustainability Strategy (ISS) and three supporting frameworks: academics, operations and administration, and engagement. The ISS provides the direction and impetus for action for the university to advance sustainability, and is in support of UCalgary's *Eyes High* strategic vision and its goal to become one of Canada's top five research institutions. Excellence in sustainability is also embedded in the priorities outlined in UCalgary's Academic and Research Plans.

Mackimmie Tower at the University of Calgary



Photo credit: University of Calgary



CLIMATE ACTION

UCalgary is one of the universities leading the way among Canadian postsecondary institutions in reducing its greenhouse gas (GHG) emission footprint. Guided by the ISS, UCalgary is striving to attain net-carbon neutrality, to be one of the most energy-efficient campuses in Canada, and to be a leader in healthy, high-performance buildings. UCalgary's Climate Action Plan (CAP) provides the roadmap for reaching these objectives.

As a signatory to the 2015 Paris Agreement, Canada is committed to reducing its GHGs 30 percent by 2030, to help reduce global carbon emissions. In 2018, GHG emissions per UCalgary campus user were 36 percent lower than in 2008, with a 30 percent absolute reduction, helping the institution reach Canada's 2030 target a decade ahead of time.

UCalgary has reduced GHG emissions by approximately 69,000 tons annually, by implementing initiatives and programs to reduce the GHG intensity of energy supply and to make new and existing buildings more energy efficient. To put that in perspective, that is approximately equivalent to the energy generated by 17 wind turbines in one year, and positions UCalgary among the leading postsecondary institutions in Canada for GHG emission reductions. UCalgary's recently released 2019 CAP has assigned renewed targets and strategies, setting the trajectory for a 50 percent GHG reduction from 2008 by 2030, and carbon neutrality by 2050.

INNOVATION IN BUILDINGS

"We are acting on our goal to be a Canadian leader in healthy, high-performance green buildings," says Joanne Perdue, associate vice-president (sustainability), University of Calgary. "With 16 certified and registered LEED (Leadership in Energy and Environmental Design) projects, including two projects certified LEED Platinum, and two net-zero carbon buildings under development, we are well on our way."

Among current projects underway, the redeveloped MacKimmie Tower and the new link and block are designed as high-performance, net-zero carbon buildings. The MacKimmie complex, which comprises more than 40,000 sq. m. of renewed spaced in the heart of the main campus, is also one of 16 projects selected to participate under the Canada Green Building Council's new Zero Carbon Building Standard.

To achieve net-zero carbon operations, the redeveloped MacKimmie Tower and new link and block will incorporate an advanced double-wall facade, which creates an energy-saving climatic buffer that also optimizes comfort for building occupants. The complex will generate more than 500 MWh of renewable energy annually through building-integrated photovoltaic systems; this energy generation, combined with energy-efficient design, is predicted to reduce the building's energy consumption by more than 90 percent.

This project is a multiyear, multiphase project, implemented to address deferred maintenance and modernization, enhance pedagogical and administrative environments, and accommodate growth. Over 1,300 people will be moving into the new MacKimmie Tower when it opens in fall 2019. The project is funded thanks to support from the Government of Alberta. The new Mathison Hall building, which is currently under design, also seeks to achieve net-zero carbon operations.

Targeting existing buildings on campus, UCalgary's Utility Reduction Program (URPr) is a key initiative in reducing the impact of building operations on the environment, institutional GHG emissions, and operating costs across the university. On completion, this multiyear program intends to reduce institutional GHG emissions by 23,000 metric tons annually while generating an expected utility cost avoidance of over \$3 million per year. URPr builds on the success of the previous multiyear Energy Performance Initiative.

Currently in year four, URPr involves discrete annual projects in various buildings across campus, and encompasses mechanical and building control upgrades, retrocommissioning, lighting retrofits to replace fluorescent tubes with LED lights, the installation of energy recovery systems, and other upgrades that allow older structures to meet current needs by rethinking how UCalgary's buildings operate.

CAMPUS CULTURE AND EXPERIENTIAL LEARNING

"UCalgary is committed to enriching our engagement by helping to make sustainability part of campus life, and by building leadership capacity and partnering with faculties and units," says Perdue.

The university's Sustainable Events program as well as the recently launched Sustainable Offices program help UCalgary community members act to make workplaces and events more inclusive, environmentally conscious, and socially responsible. These programs aim to build and support a sustainability culture on campus by offering UCalgary-specific best practices as well as simple tools, resources, and workshops to support sustainable decision-making.

"We also differentiate ourselves and our sustainability practices through our ongoing pledge to provide opportunities for students to thrive in programs rich with research, formal education, and applied, hands-on experience. This too emerges from our institutional *Eyes High* vision and our Academic Plan," says Perdue.

"We are advancing sustainability education and research by integrating sustainability across disciplines to respond to and partner with our community. Our research aims to solve social, economic, and environmental sustainability challenges locally and globally. At UCalgary, we offer more than 400 sustainability-related courses, with more than 30 percent of our faculty working in sustainability-related research areas."



UCalgary's Community Garden

Photo credit: University of Calgary

The Campus as a Learning Lab (CLL) program brings together students, faculty, and staff to work on projects that make UCalgary more sustainable and bring the ISS to life. In 2018, more than 80 undergraduate and graduate students were involved in more than 25 CLL projects.

One example of a CLL project is the Campus Community Garden, which provides a space for growing pesticide-free food and connecting on projects that support the development of sustainable food systems, healthy eating, and an understanding of food security/insecurity.

Additionally, this year, UCalgary saw the first cohort of graduates from its new undergraduate certificate program in sustainability studies. This program includes partnerships with the City of Calgary and UCalgary operational units, which provide hands-on, sustainability-related research opportunities. Students in the program have the unique opportunity to work with stakeholders and communities on real-world challenges.

UCalgary is a place where students become leaders through experiential learning, grounded in sustainability. The university has over 50 sustainability-related clubs on campus, several of which work together through the Sustainability Club Alliance. This past year, several clubs came together to align their efforts with the United Nations Sustainable Development Goals (SDGs). Student sustainability leaders are supported through a variety of programs offered out of UCalgary's Sustainability Resource Centre.

A MORE SUSTAINABLE FUTURE

UCalgary's efforts in sustainability are continuous, and they adapt based on the growing needs of the community. The university has been recognized for ongoing efforts in sustainability, having received the Global Compact Network Canada's Sustainability Development Goals Award in 2017, and was named Canada's Greenest Campus by Corporate Knights that same year. UCalgary has also maintained a STARS Gold Rating since 2013 for overall sustainability performance from the Association for the Advancement of Sustainability in Higher Education (AASHE), and it has been a certified Fair Trade Campus for the past three years.

"At UCalgary, we are tackling some of the global sustainability challenges facing universities, governments, and businesses in Canada and around the world," says Perdue. "These are difficult challenges and there are no quick solutions, but we recognize the importance of this work. We strive to make sustainability a part of campus life for students, faculty, and staff, building leadership capacity, knowledge, and partnerships across our faculties and units, and with local and global communities." §

Clara Deacon is the manager, institutional communications, at the University of Calgary, Calgary, Alberta, Canada; she can be reached at cclore@ucalgary.ca. This is her first article for *Facilities Manager*.