

Starting with sustainable buildings

NEW CAMPUS BUILDINGS DEMONSTRATE LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN



East side of Engineering, Management and Education building



Reichwald Health and Sciences Centre



Purcell student residence

When plans were being made for the addition of five new academic buildings and more than doubling the number of student residences on campus, the buildings had to meet the needs of students, staff, faculty and the environment. The new buildings needed to be welcoming, functional, environmentally friendly and energy-efficient.

It was vital that the new facilities be designed with a minimal footprint. The Canada Green Building Council's Leadership in Energy Efficiency and Design (LEED®) principles were applied to ensure efficiency in energy use, water consumption, material selection and construction waste management, among many areas. Built to LEED® Gold Standard, energy efficient technologies were incorporated into new academic buildings including the Engineering, Management and Education building (EME), the Reichwald Health Sciences Centre (RHSC) and the Purcell student residence featured here.

The EME consists of two, four-storey towers, common areas, lab rooms, meeting rooms, study rooms and a high-head lab. The common areas are bathed in natural light through windows and skylights. The upper and lower foyers serve as popular gathering places for students to work and socialize. A sense of welcome and space for collaboration contributes to the campus' social sustainability.

Anticipated to achieve 5/5 LEED® Innovation in Design points for clearwater utilization, education, green housekeeping and green power, the EME was also built for greater energy efficiency compared to a conventional building of similar size. The building is integrated into the campus' geo-exchange district energy system, which transfers heating and cooling energy from an aquifer water loop into campus distribution piping on a separate closed loop. At 17,000 square meters, the

EME is anticipating a 42 per cent "regulated" energy savings over the base-level Model National Energy Code for Buildings.

The Reichwald Health Sciences Centre is also integrated into the geo-exchange district energy loop. The strategic use of glazing and shading devices provides shade along the eastern façade to further reduce the energy used to cool the building. Targeting LEED® Gold Certification, this building is anticipated to use 49 per cent less energy and generate approximately 285 fewer tonnes of greenhouse gas emissions than a conventional building of similar size.

Students housed in the newest residence on campus are also living in one of the most energy efficient residences. The 212-bed Purcell building has its own closed geo-exchange loop, and preliminary energy modelling demonstrates a 45 per cent savings over the Model National Energy Code for Buildings. Before this project was even complete, it was received \$58,000 FortisBC PowerSense award for the energy efficiency measures adopted during the design and construction process. It was subsequently awarded UBC REAP (Residential Environmental Assessment Program) Gold Certification.

All three of the new buildings have incorporated green roofs. Plants are grown on designed matting on top of the building, which acts as an insulator and captures rainwater for rooftop irrigation. The RHSC has the largest green roof, which also serves as an acoustic dampener for the indoor classroom theatre. Great care was taken to ensure all three of the newest buildings were also as water-efficient as possible. Waterless urinals, dual flush toilets and low-flow, motion-controlled faucets are anticipated to reduce consumption by almost 40 per cent. ●

