



# Tireless efforts

Kwantlen University College is located in the most ecology-minded province in Canada, so sustainability comes naturally, facilities director Karen Hearn tells Gary Toushek

**Kwantlen University College** was established in 1981 by splitting from Douglas College (founded in 1970, one of the largest public colleges in British Columbia). Its four campuses—Surrey, Cloverdale, Langley and Richmond—are located just beyond Vancouver in the Fraser Valley. Its name, Kwantlen, is a native word meaning “tireless runner” and is symbolic of the school’s sustainability efforts, which are ambitious and ongoing.

The facilities department, led by its enthusiastic

director, Karen Hearn, has undertaken a serious commitment to recycle materials, reduce costs, conserve energy and be environmentally sustainable. Responsible for the planning, design, construction and maintenance/operation of all campus facilities, she recalls the university college’s first recycling and energy management initiatives were in the late 1980s, modest efforts that showed awareness.

In 1995 Kwantlen was one of a few post-secondary institutions in Canada to register with

Canada's Climate Change Voluntary Challenge Registry (VCR) to reduce greenhouse gases. In 2002 Kwantlen performed the pilot project for the province's Green Building Initiative, completing an energy efficiency project. "So we've been early adopters of sustainability," she says. "It's nothing really new; energy conservation and environmental prudence have been encouraged throughout our society since the 1970s. They're just moving more quickly here in BC and in places like Portland, Oregon. It must be something in the water in the Northwest," she jokes.

What drives the initiative? "A passion in the facilities department was the initial kernel that sparked it, supported by the administration, in all aspects at the university college," says Hearn. "It's just good practice, providing this kind of leadership. We're really excited that other organizations are realizing the value of sustainability." She's referring in part to the presentations she and her staff deliver at conferences and to community groups, using the projects at Kwantlen as cohesive, successful examples of smart sustainability.

One example is the new \$42.3 million Trades and Technology Centre on the Cloverdale campus. The 183,000-square-foot building sits on 73 acres of natural habitat. With its innovative, bold design, it's a showcase for an integrated approach to architectural design. "It minimizes the amount of material needed in the building to begin with," says Hearn, "with minimal mechanical system requirements that cost less to operate. So there's less to maintain now and less to replace in the future, while creating a comfortable learning environment for students." The building is 33 percent more energy efficient than one of comparable size, as well as 50 percent more efficient in water conservation. More than 75 percent of its construction materials are recycled, and at least 50 percent of all materials were procured locally.

It has some innovative features, such as the exhaust system for the 42-booth welding shop: a low-voltage light switch on each booth is linked back to the variable-speed drive on the fan that controls the exhaust, so the fan rate is adjusted based on the number of booths that are occupied, thereby conserving energy and saving money. More than 90 percent of

the building's internal spaces have views to the outdoors, and the use of pine beetle wood for the acoustic ceiling is functionally attractive and makes use of material that's typically considered waste.

The furniture from the previous trades & tech building was reconditioned, "which critics said would detract from the new design," says Hearn. "But we were determined to recycle as much as possible, and we saved more than \$300,000 that might have been spent on new furnishings and instead invested that in new equipment, such as more energy-efficient welding machines. So we made good choices that enabled students to get the best technology possible. We wanted to create an exceptional training environment for students, a facility with a diversity of construction styles within it, to support their learning."

The Centre is under review to receive LEED Gold certification, but that wasn't a primary design concern, Hearn says. "LEED is a wonderful guide for measuring accomplishments in sustainability. There are always choices to be made, and a challenge with any rating system is ensuring that what you're putting into a project is the best for your organization and for the environment, and not necessarily just to get another LEED point. I've done a presentation for some of my colleagues called 'Sustainability with Eyes Wide Open,' and four of the seven of us in facilities management are LEED-certified professionals, because we thought it important to really understand what LEED is about, to assist our design team and to make suitable choices for our organization."

For example, Hearn notes, replacing existing toilets with new ones that conserve water is only practical for high-use washrooms. Otherwise, ripping out the existing fixtures and sending them to the landfill and then buying and installing new, more efficient ones, doesn't make sense. "You have to look at the whole situation rather than just the components. So we don't put

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Other new construction includes a library extension and a Student Services and classroom building at the Surrey campus that have both used concrete for the structure, geothermal energy to heat and cool the space, natural ventilation provided through conditioned trickle vents and utilizing the stack effect, thus eliminating the need for an air handler and ductwork. The Library expansion is predicted to be 74 percent more energy efficient. A small research lab and greenhouse for the Institute for Sustainable Horticulture, currently under design for the Langley campus, will use geothermal heat for the greenhouse as part of the experimentation, to demonstrate a viable alternative for the

horticulture industry.

A Resource Management Action Plan outlines Kwantlen's energy reduction commitment of 45 percent for electricity and 25 percent for natural gas by 2010. Its previous commitment to reduce electricity use by 35 percent by 2006 was accomplished more than a year early.

"We do a lot of pilot projects," says Hearn. "We're always trying new things. Two years ago we changed mail delivery between campuses from day to night, when there's less traffic. We reduced travel time by two hours per day, so far more than 1,000 hours, which is more than 30 tons of carbon dioxide reduction. One of our opportunities is to embrace sustainability for all our campus buildings and renovations. And we do green cleaning and maintenance, but we need to take it even further than we have." ■

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