



CASE STUDY: OKANAGAN UNIVERSITY COLLEGE

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*Dr. Katy Bindon
OUC President*

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Okanagan University College

Okanagan University College (OUC) offers a wide variety of career, continuing education, degree, developmental, trades, university transfer and vocational programs. OUC is a public post secondary educational institution located in Kelowna, British Columbia and serves a 37,750 square kilometer region extending from Osoyoos and Princeton in the south and west to Mica Creek and Revelstoke in the north and east. OUC has five campuses in British Columbia consisting of; two in Kelowna, one in Penticton, one in Salmon Arm and one in Vernon.

CHALLENGE

OUC is committed to implementing energy efficiency measures in support of Canada's Voluntary Climate Change Challenge and Registry Program. OUC engaged Direct Energy Business Services to investigate potential operating cost reductions in their Kelowna campuses (named KLO and North Kelowna respectively) through the identification and implementation of cost-effective energy conservation measures. In October 2002, an initial Energy Initiative Proposal was submitted to the OUC Management team, and subsequently, approval was given to complete a detailed investigation and energy engineering of the proposed efficiency measures. Following this investigation, the project commenced.

SOLUTION

Direct Energy Business Services was asked to be a partner in a leading edge energy conservation initiative between OUC and the City of Kelowna. This project helped improve the efficiency of heating, cooling and ventilation systems on campus, and helped reduce energy and operating costs.

The Waste Water Heat Reclamation Project involved upgrading OUC's heating plant with new high efficiency boilers, heat pumps and chillers that tie into the existing system. The new system takes clear water from the city's wastewater plant, heats it and delivers it to an existing underground pipe system that supplies all campus buildings.

The project involved the following actions:

- A retrofit of existing building systems that replaced and significantly improved the core heating and cooling infrastructure by permanently reducing energy and operating costs
- North Kelowna campus measures included: electric meters amalgamation, central plant combustion fan control, central plant primary secondary loop, hydronic heating loop optimization, ventilation optimization and central plant efficient burner



- South Kelowna campus measures included: heat pump chiller plant with two high efficiency condensing boilers, underground piping replacement (Trades Bldg.), new efficient chillers, ventilation optimization and cafeteria condensing water heaters

Many system and comfort issues were addressed by the project. Operating conditions were enhanced and core heating, cooling and ventilation systems were replaced and improved. Those using the facility as well as OUC (which will have an energy efficient, environmentally sensitive facility) will experience the benefits.

RESULTS

This innovative conservation project contributes to Canada's Climate Change Plan under the Kyoto Protocol. The resulting reductions in carbon dioxide are equivalent to planting 418 acres of trees or removing 166 cars from the road. While initial costs for the project are approximately \$2.4 million, OUC is expected to save over \$300,000 per year in energy costs equating to a payback period of 8 years.

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