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Technology**

Guestroom Energy Management System

Solar, Geothermal System Helps Heat, Cool British Columbia's Best Western-Kelowna

By Glenn Hasek
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KELOWNA, B.C.—Anyone skeptical about using the power of the sun to heat and cool a hotel should give Greg Salloum a call. He is c.e.o. of Salco Management Ltd., the owner of the 154-room Best Western-Kelowna in British Columbia. For more than six years now, the hotel has been heated and cooled with the help of a solar and geothermal system.

In 2000 and 2001, 102 hot water solar panels were installed on the hotel's roof. At that time, two five-ton heat pumps also were installed in the hotel's basement. The system cost \$258,000, of which \$53,000 was paid by the federal government of Canada. The solar installation was the first one on a Canada-based hotel. This first phase of solar panel and heat pump installations prevented the release of 90 tons of greenhouse gases into the atmosphere because natural gas did not have to be burned.

Salloum says for years he had wanted to find an alternative to heating water with fossil fuel. Now, the sun heats up a water and glycol mixture that passes through pipes behind the solar panels. That water is directed through a water-to-water heat exchanger that collects the heat for the heating of water for the hotel's swimming pool, two hot tubs and domestic hot water.

Thanks to an \$80,000 investment in a 50-ton heat pump in 2004, the hotel is also able to heat and cool its guestrooms. During the middle of summer, the solar and geothermal system produces 100 percent of the energy needed for heating hot water and lowers the electrical bills for cooling. During the winter months, when cloud cover can limit exposure to the sun, the system supplies about 20 percent of the energy needed for heating. The hotel's boiler supplements the system at that time.

Being a stickler for reusing as much waste heat as possible, Salloum invested in a system that captures heat from the hotel's chiller and has connected a heat exchanger to the laundry dryer vents. Heat from these vents is transferred through an air-to-water heat exchange process and put back in the hot water line that goes to the hotel's washers.

In summer 2005, compared to summer of 2000, the cost of natural gas consumption per person dropped from 56 cents per person per day to 28 cents.

"Any energy savings contributes to the bottom line of the business and it also is good for the environment," Salloum says. "I am very pleased with the results we have had and they are proof that energy and dollar savings are good enough reasons to go ahead with these systems."

Return On Investment Measured

The Best Western-Kelowna expected a 5.5-year payback on its first-phase investment but had to stretch that time frame somewhat because the estimate was based on the amount of hot water used by a typical guest in a European hotel. It was a Swiss company, Swiss Solar Tech Ltd., that installed the system. Guests in Canada tend to use more water. Salloum says the hotel, which has been in his family for 35 years, should meet its 5.5-year return on investment goal for the 50-ton heat pump.

On an ongoing basis, the solar and geothermal system requires little upkeep. The solar panels have a 50-year warranty and require only a 1/2 -horsepower heat pump.



Salloum says the unique heating and cooling system has paid big dividends from a public relations perspective. The hotel has received numerous awards for its energy conservation efforts. Guests are informed about the solar and geothermal process in the in-room guest directory.

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For those hoteliers considering the type of system implemented at the Best Western-Kelowna, Salloum has some words of advice.

“Go with a contractor with a solid track record who can show you results from other hotels,” he says. “Check the contractor’s references and be sure follow-up support will be available to ensure the system functions as it should.”

In addition to reducing energy costs with its solar and geothermal system, the Best Western-Kelowna also uses washer/extractors to minimize the amount of time needed to dry linens. Dryers feature residential moisture control to ensure that they run no longer than necessary. Fluorescent lighting is also used where possible.

Go to [Best Western Inn—Kelowna](#) or write to Greg Salloum at bwgreg@discoverkelowna.com.

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