Terasen Gas

Solutions

Spring 2007
Energy services for commercial customers

Vancouver Island and Sunshine Coast

How to cut your annual gas bill by more than $80,000

That's exactly what one Terasen Gas customer achieved after a three year system monitoring and equipment upgrade program. All the more remarkable was that simple solutions were found to solve seemingly complex energy efficiency problems without any major capital investment in a new heating plant.

John MacLean, of Bentall Real Estate Services LP, manages the property in question — a 26-storey, 361,000 square foot office tower located at 1075 West Georgia Street, Vancouver. The building uses natural gas to provide hydronic space heating, ventilation air heating and domestic water heating.

Average annual gas consumption for the building had been in the order of 21,000 GJ costing more than $200,000 per annum.

A computerized building management system controls the operation of the boilers, chillers and the distribution of both heated and cooled air and water within the building. Two water-tube boilers rated at 10 million Btu per hour provide hot water to coils in the air handling units and reheat coils in the air distribution system. The boiler also heats domestic hot water for washroom use in the building. Hot water usage is very low compared to the space heating load.

Through the initiative of John MacLean, several system changes were made.

In 2002, the HVAC operation schedule was changed including development of a damper maintenance program throughout all plenums, and a review of the maintenance contract for HVAC controls to ensure a proper maintenance schedule for all controlled equipment.

In 2003, isolating valves were installed to allow the two boilers to operate independently. Each boiler had a two-stage (high/low fire) burner. Until the change, both boilers would fire together at high, low or off position. The isolation of the boilers increased the number of firing stages to four. At the same time, the heating coil in the main supply air fan was cleaned. A significant amount of dirt had clogged the coils, reducing heat transfer from the boiler to the ventilation air. During the fall of 2003 the two-stage burner on one boiler was replaced with a fully modulating power burner. In addition, thermal wells were installed to more accurately measure boiler water supply and return temperature. The thermal wells replaced temperature sensors that simply contact the exterior surface of the pipe.

In 2006, the second boiler was retrofitted with an identical burner. The gas consumption records for the period in question were compared to heating degree-days for the same period to determine the weather adjusted savings that occurred from the specific changes. The results indicate that the system modifications and new maintenance procedures were the foundation for the

(Continued on back page)

Good surfing makes for good service

Our latest customer satisfaction survey suggests that the changes we've made to our website make it easier to find what you need. In fact, customer usability is up from 10 per cent in 2003 to 47 per cent in our 2006 survey. We continually improve web tools and features with you in mind. We invite you to try out our Account Online where you can check your billing records and see your historical gas consumption for reference.

Burn blue. Save green.

When it comes to space heating and water heating, there's no beating the savings you can achieve with natural gas. Because the clean blue flame of natural gas helps you save two kinds of green — your hard-earned cash and the super natural environment that we enjoy in British Columbia. To find out more about saving green, visit our website at www.terasengas.com/Business/SavingEnergy

Understanding your gas bill – a quick refresher

The information shown in the following article was printed incorrectly in a previous version of this issue – we apologize for any confusion this may have caused.

Gas charges	
1 Basic charge	10.50
2 Charge for gas used (7.2 GJ at 13.715 per GJ)	98.75
	109.25*

1 Basic charge – a flat monthly fee that partially recovers various fixed costs incurred by Terasen Gas. These costs arise whether or not natural gas has been used, and includes services such as emergency response and meter reading.

2 Charge for gas used – The amount and cost of the gas you used during the billing period. The cost of the gas is dependent upon your annual volume and reflects the rate class you fit into. Your rate class appears under your address in the top left corner of your gas bill.

If you have questions about your gas bill, you can find a sample bill on our website with detailed explanations of how it is calculated and itemized. You may also call Terasen Gas customer service at 1-888-224-2710.

No rate increase is good news

Vancouver Island commercial customers will be happy to note that there will be no gas commodity rate increase following the latest quarterly review with the British Columbia Utilities Commission. The BCUC accepted Terasen Gas' recommendation that customer rates remain unchanged for the period April 1 - June 30, 2007.

Need our help?

Are you paying the lowest possible scheduled rate for your natural gas? Is your business using too much gas?

If you have any questions or concerns about your natural gas account please contact Dennis Light at 250-751-8351 or e-mail dennis.light@terasengas.com

Smell gas? Act fast!

If you suspect a gas leak, leave the premises immediately, get to a nearby phone and call the Terasen Gas 24-hour emergency line at 1-800-663-9911, your local fire department, or 911.

Meter safety

Terasen Gas owns and maintains the gas piping up to and including the meter at your business. You can help us serve you better by keeping a few things in mind:

* Make sure your meter is visible at all times and accessible for maintenance and emergency responders
* Don't attach or chain objects to your meter or gas piping.
* Don't enclose your meter in any way.

For more safety tips visit www.terasengas.com

(Continued from first page)

savings that occurred with the replacement of the burner. Gas consumption started dropping in November 2003 and has continued on a downward trend through to present. Weather-adjusted gas consumption has decreased by 43% from October 2003 to December 2005. The reduction is slightly less at 39% comparing GJ/degree-day from August 2002 to December 2005.

A job well done

The reduction in natural gas usage at 1075 West Georgia Street was achieved with very modest changes to the heating system and demonstrates the benefits of considering the building as an integrated system. The lessons learned can be applied in many similar buildings in the Lower Mainland and throughout British Columbia. The decreased use of natural gas lowers the operating cost to the owners, increases the productive use of the facility and decreases the emissions of greenhouse gases to the benefit of all.

Solutions TGVI (rev) 0407 06-356.1

Get comfortable. Terasen Gas