



Bruce MacNeil, Director of Facilities Management, Mount Saint Vincent University

## Efficiency measures put university on firmer financial footing

**OVERVIEW |** Mount Saint Vincent University (the Mount), located in Bedford, Nova Scotia, has a reputation for distinctive programs, personalized education and small classes. It has a 4,000-plus student body, supported by more than 300 full and part-time faculty and 230 staff.



**efficiency**  
NOVA SCOTIA CORPORATION

**SITUATION |** For a number of years the Mount used some of its operating budget to tackle small energy-efficiency projects that had a fairly quick return on investment. To address the Mount's overall energy issues a fully integrated approach was developed.

**SOLUTION |** With support from Efficiency Nova Scotia and Natural Resources Canada's ecoEnergy Program, the Mount undertook a campus-wide energy efficiency retrofit.

**BENEFIT |** In the first year, operating costs were cut by \$402,000 and \$1.3 million will be saved through reduced or deferred maintenance costs. The Mount has reduced its overall electrical consumption by over 1,500,000 kWh annually. The mindset around energy-efficiency has come to the forefront and the university's sustainability and awareness campaign has taken hold.



L to R: Tex Barkhouse - Manager Maintenance, Bruce MacNeil - Director Facilities Management, Rick Walkden - Supervisor Custodial Services, Jamie Swindells - Chief Power Engineer.

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Director of Facilities Management

Thanks to a string of energy efficiency measures, Mount Saint Vincent University is in better shape to weather the economic uncertainty and provincial belt-tightening affecting Nova Scotia's post secondary institutions.

In the first year of its efficiency plan, the Mount trimmed its operating costs by \$402,000, more than double the initial \$180,000 estimate, says Bruce MacNeil, the university's director of facilities management. And that's not the final figure, he says, because "you don't get all your savings in the first year." As well, the university anticipates saving \$1.3 million in reduced or deferred maintenance costs. "That was critical for us," he says.

The financial results, aided with help from Efficiency Nova Scotia, took a major stride forward with new lighting. MacNeil explains, "right across campus, we've done a total lighting retrofit." He says,

"there is not a T12 light remaining on our campus anymore." Every lamp, outside and indoors, was replaced. It was a significant step; reducing electrical consumption by over 25 percent. But the Mount didn't stop with lighting. MacNeil says, "every pump and fan on campus has a variable speed drive on it now. We've switched to natural gas on our central heating plant." Previously it ran on oil, a more expensive fuel, and the plant is big enough to heat 450 homes. The combined effect of those initiatives reduced the university's heating costs by 10 percent and diminished the output of pollutants and carbon dioxide by 25 percent.

"We did everything from switching out water facets, to toilets, to shower heads, so we attacked the whole gamut, right across the board," MacNeil says.

Other initiatives included installing low-flow washroom fixtures, reducing water consumption by 40 percent, new windows for Evaristus Hall, the main administrative building, a new doubled insulated roof for the Seton Academic Centre and a \$3.4 million upgrade and expansion of new student space in Evaristus Hall.

The university's commitment to efficiency has been growing for some time. MacNeil explains, "for a number of years we were able to take some of our operating monies and take on smaller projects." They netted "a fairly quick return on investment," he says, and that success paved the way for a broader more ambitious plan that enlisted Efficiency Nova Scotia help to tackle the Mount's larger scale energy-efficiency issues.

Results from the university's participation in Efficiency Nova Scotia's programs have been so positive, MacNeil recounts, that when the report was presented, "the first question from the president was: "What's phase two?" So we are we are looking at that right now to see what else we can do."

The bottom line wasn't the only thing that improved for the university. Mindsets altered too and the Mount is now positioned as a community leader in environmental sustainability. "Our sustainability and awareness campaign is really taking hold now," says MacNeil.

With support from Efficiency Nova Scotia and Natural Resources Canada's ecoEnergy Program, the Mount:

- Replaced all campus lighting fixtures with more efficient options and reduced energy consumption by 25 percent.
- Installed intelligent building automation systems to reduce energy usage and improve occupancy comfort.
- Converted the water-cooled condensing unit in Seton to a direct-digital system, dramatically reducing water consumption.
- Installed low-flow washroom fixtures campus-wide and reduced water consumption by 40 percent.
- Converted the central heating plant from oil to natural gas, cutting operating costs by 10 percent and reducing carbon dioxide emissions by 35 percent.

- Made changes to the supply, exhaust and distribution of air in the kitchen and dining room areas in Seton Café to facilitate heat recovery.
- Installed variable speed drives on every pump and fan on campus.
- Replaced the air handling unit with a heat reclaiming model, improving efficiency by 50 percent.
- Maximized ventilation efficiencies with occupancy sensors, automated scheduling and heat recovery.
- Replaced Seton Academic Centre's roof and doubled its insulation.
- Installed new energy efficient windows in Evaristus Hall.
- Replaced older monitors and personal computers with energy efficient models.
- Upgraded and expanded Evaristus Hall to provide more student space, added laboratories and a multi-faith area.

The university's environmental message was so well received, he says, "everyone from the custodial staff to the president of the university – knows about this campaign and every time we have a meeting there is a sustainability update."

Students are enthusiastic. "We do get the students asking: What are your green programs? How do you do this? How do you recycle?" He says, "It's top of mind for every student, and if you don't have a program in place, you're behind."

Student priorities for recycling and reducing the availability of bottled water on campus are being addressed. He says, "The students have their own campaign that they are working on, and we support them with that."

MacNeil reports excellent support and customer service from Efficiency Nova Scotia: "Chuck Faulkner worked with us from day one, when we looked at just the conceptual design of what this thing could look like and the typical simple paybacks that we were looking for." As plans progressed, the Mount was introduced to other Efficiency Nova Scotia experts and partners who opened doors to new concepts and possibilities.

The experience has made MacNeil discard the old idea that utility costs are a fixed business expense. He says, "You can dramatically impact it." He hopes the example set by universities such as the Mount in this relatively new area of cost savings will encourage businesses to follow suit. Says MacNeil, "it is something that I think every business should undertake."