



primeEnergy

Providing the Competitive Advantage



Eco-Zone Around
Toronto Airport Takes Flight

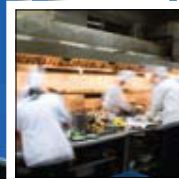
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Quick Payback
with Ventilation
Technology

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How Commercial
Kitchens Can
Save Big

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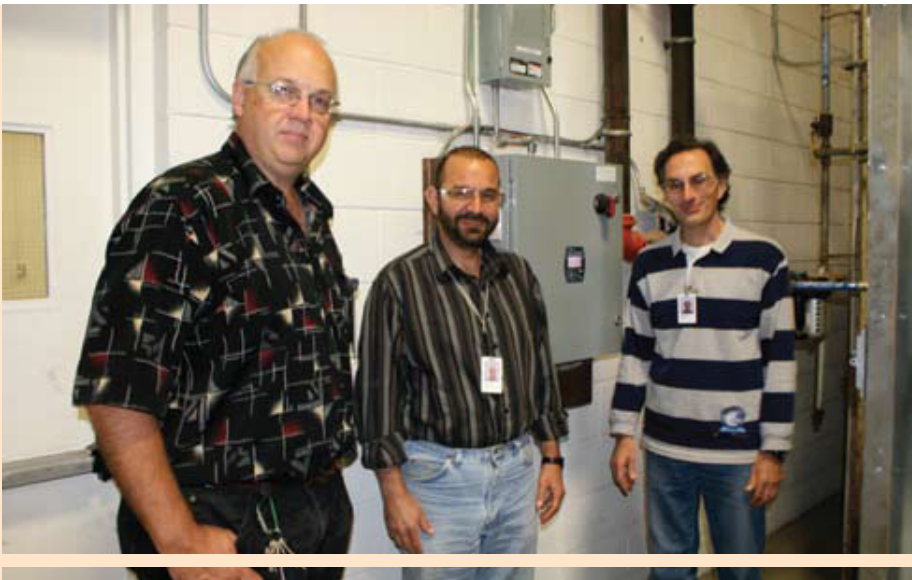
Fuel Cell a
Global First

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Build It Better and
Reap the Rewards

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Left to right: Lawrence Bouchard, Facility Manager; Zouheir Arzouni, Facility Engineer; and Angelo Silvi, Electrical Engineering Technician.



Knoll's Ron McKeown in a spray booth.

Environmental Edge

Demand control ventilation reduces heat loss, utility bills

In these challenging economic times, Knoll North America Corp. may be the envy of many firms as the company reported strong results for 2008. A key factor in the company's success is their determination to be on the leading edge, not just in compelling design, but also in environmental excellence.

Knoll's commitment to sustainability is broad based. It is the first furniture company to achieve Forest Stewardship Council (FSC) Chain-of-Custody certification for a line of products and the first to sign up for the Chicago Climate Exchange (CCX). Knoll's new showrooms are LEED® certified and its East

Greenville, PA manufacturing facility is also LEED® certified. In addition, every new capital project must be vetted with a CO₂ footprint analysis, and every production site tracks its CO₂ emissions on a monthly basis in order to meet the corporate goal of a 6% reduction by 2010 (in absolute terms, independent of growth in production).

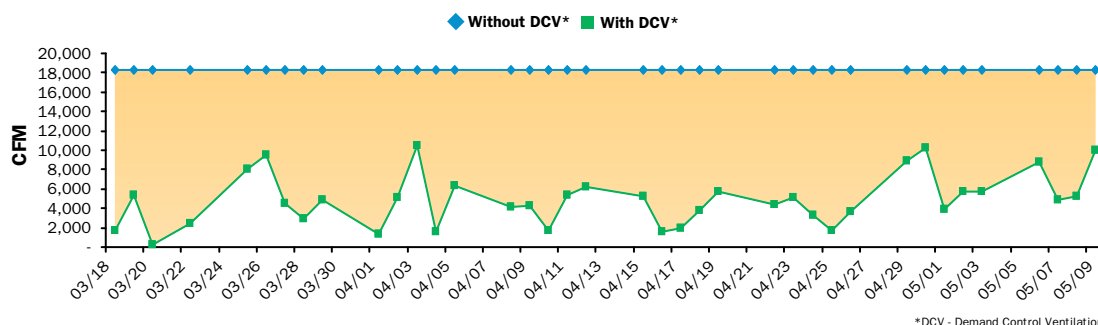
The Knoll production facility, on Arrow Road in Toronto, is putting the principles of environmental stewardship into practice with great results for the bottom line. Facility Manager Lawrence Bouchard, working with his engineering team members, Zouheir Arzouni

and Angelo Silvi, has spearheaded a number of environmental initiatives including metering and monitoring natural gas use, boiler retrofits, high-volume low-speed fans to improve de-stratification, paint line process improvements, and lighting retrofits. Three years ago, the team undertook a comprehensive review of opportunities to reduce energy waste. The plant's 12 paint spray booths were identified as a key source of heat loss and higher heating bills. Industrial paint booths exhaust heated or cooled air at 100 cubic feet per minute to capture excess spray and exhaust dangerous VOCs (volatile organic compounds) used to thin paints and lacquers. Knoll's booth ventilation systems were running full-time through three work shifts a day—with thousands of dollars of heated air wasted annually.

Bouchard and his team heard about Noveo Technologies Inc.'s variable air exhaust controls for industrial paint booths, through a "sister plant" in Woodbridge. They consulted with Enbridge Energy Solutions Consultant,

OPERATION MONITORING

Cubic Feet Per Minute Required By Air Make-Up



*DCV - Demand Control Ventilation

Daniel Chum, who has worked closely with Knoll to plan and implement a number of efficiency projects. Chum recommended that Knoll try a Noveo AIR™ exhaust control system at the Arrow Road location. A double paint booth was selected for the test because there was a lot of fluctuation in its throughput, therefore a lot of down time. The booth's two 5-hp exhaust fans and one 20-hp make-up air unit were running continuously in operating hours.

A Noveo AIR™ system was installed in December 2007. The system uses sensors to detect spray application and monitor VOC levels. A microcontroller reduces the exhaust in user-adjustable stages, ensuring that air is exhausted safely and only when needed. The innovative technology is designed to reduce energy consumption and associated greenhouse gas emissions.

Noveo monitored 38 days of operation from March through May 2008, compiling information from the sensors to determine actual spraying time. The data was then used, along with Environment Canada heating degree-days, to estimate annual gas and electricity use with and without the ventilation controls. The results for the test booth are based on 30% actual utilization. Noveo AIR™ delivered 73% natural gas savings and 83% electricity savings, and reduced greenhouse gas emissions by 75%. The project payback is less than two years. A second exhaust ventilation controls system has been installed in a booth with 40% utilization. The payback here will be between two and three years¹. A third installation is planned for a climate-controlled automated spray booth, where the reduction in use of natural gas for both make-up air and humidity is expected to result in even greater savings.

Bouchard says that the ventilation control system will be standard for any new paint booths at this plant. He also hopes to implement more installations on a retrofit



Using Noveo Technologies Inc.'s variable air exhaust controls for industrial paint booths, furniture manufacturer Knoll was able to realize 73% natural gas savings, 83% electricity savings, and a reduction of 75% in greenhouse gas emissions.

basis and is evaluating the possibility of linking the ventilation controls to a full building management system. He believes that Knoll's ability to provide products using sustainable inputs and processes has given it a huge competitive advantage, particularly in the last few years: "Most of Knoll's customers take a strong stand on the environment and are looking to partner with suppliers with the same focus."

Enbridge provides incentives to encourage the adoption of new ventilation solutions and matches customers to appropriate

technologies. Knoll received a \$4,058 Enbridge energy efficiency grant for their two Noveo AIR™ system installations. Demand control ventilation has a number of applications including spray painting, welding, and propane forklift operations.

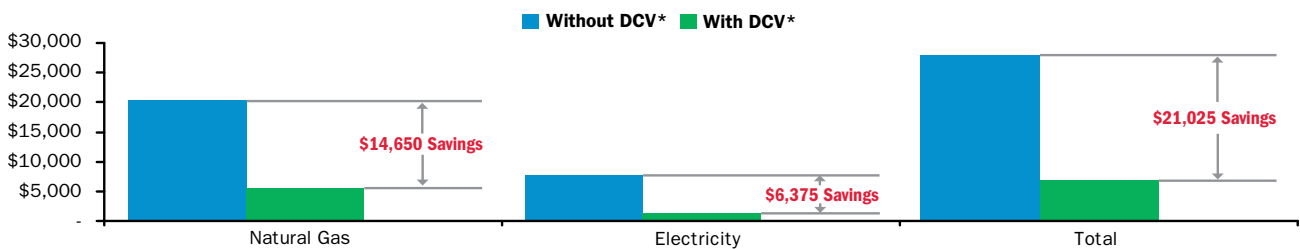
Interested in finding out more about demand control ventilation?

Contact Enbridge at 1-866-844-9994 or visit www.enbridgegas.com/industrial.

| Annual Results | | | | |
|------------------------------|------------------------------------|---------------------------------|-----------------------|-----|
| | Without Demand Control Ventilation | With Demand Control Ventilation | Savings | |
| Natural Gas | 43,868 m ³ | 12,020 m ³ | 31,848 m ³ | 73% |
| | \$20,179 | \$5,529 | \$14,650 | |
| Electricity | 93,101 kWh | 16,293 kWh | 76,808 kWh | 83% |
| | \$7,727 | \$1,352 | \$6,375 | |
| Total | 2,014 GJ | 519 GJ | 1,495 GJ | 75% |
| | \$27,906 | \$6,881 | \$21,025 | |
| Green House Gas (GHG) | 113.2 tons | 28.2 tons | 85.0 tons | 75% |

Natural gas rate = 0.46 \$/m³
Electricity rate = 0.083 \$/kWh

Energy Cost Analysis Per Year



*DCV - Demand Control Ventilation

1. Actual savings results will vary depending on the particular application and operating conditions.