



Energy Innovators Initiative Energy Innovators Case Study

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MINTOURBAN COMMUNITIES: AN ENERGY EFFICIENCY AND ENVIRONMENTAL LEADER

*Andrew Pride, Vice-President,
Energy Management,
MintoUrban Communities Inc.*

The Company

MintoUrban Communities Inc. (MUCI) is a privately owned and operated business that is part of the Minto group of companies. Established in 1955 as a new home construction company, Minto has grown into a fully integrated real estate development, construction and management company operating in Ottawa, Toronto and southern Florida. MUCI operates a large portfolio of multi-residential rental properties, ranging from garden homes and town homes to walk-ups and highrise apartments. Other Minto companies own and operate more than 186 000 m² (2 million sq. ft.) of commercial space and a 418-room luxury suite hotel.

Minto has always been proactive in working toward improved energy efficiency and sustainable development. "There is a strong commitment to reduce operating costs and improve overall energy efficiency across the Minto organization," says Andrew Pride, Vice-President of Energy Management, noting that the company received an International Award for Corporate Energy Management from the Association of Energy Engineers in 2000. "The people involved in operating the properties are knowledgeable about energy efficiency and they strive to make improvements whenever possible. It's part of their job." This commitment is part of the reason why Minto is at the forefront of companies that are improving their energy efficiency and reducing the greenhouse gas (GHG) emissions contributing to climate change.

Minto has been paying greater attention to energy efficiency since May 1999, when it created the Minto Energy Management (MEM) Division. MEM has a mandate to make Minto an energy efficiency and sustainable



Castlehill highrise



Natural Resources
Canada

Ressources naturelles
Canada

Canada

development leader in the multi-residential sector by reducing GHG emissions, energy consumption and water consumption in Minto properties while maintaining or improving the living and working environment of tenants and customers – and yielding an acceptable return on investment (ROI). The MEM goal provides a “win-win-win” scenario by protecting the environment, increasing value to shareholders and improving customer satisfaction.

A \$20-Million Energy Budget

Energy is a major cost of doing business for the Minto group of companies. Each year, MUCI and other Minto companies spend up to \$20 million on lighting, heating and cooling and other energy-related services (e.g., elevators) for their residential, commercial and hotel properties. The rising cost of energy, combined with the complexity of managing and paying utility accounts, led company management to reconsider its approach in the late 1990s.

“The senior management group basically said, ‘We spend a lot of money on utilities and we have all these different businesses. We really need a group to focus on energy, which traditionally has been a secondary consideration in our business,’” explains Mr. Pride. “They wanted to establish a business unit that would focus on how we can improve our facilities and better manage the energy side of the business. That was how the Minto Energy Management Division came into being.”

Alan Greenberg, President of MUCI, confirms the company’s philosophy. “We see utilities as our largest uncontrollable variable cost, with the potential for significant long-term increases,” he notes when asked to comment on MEM. “We saw this as a way to improve the environment and reduce waste while appealing to environmentally aware customers.”

Mr. Pride was hired to head up MEM, based on his many years of experience working for an energy performance contracting company. Minto’s senior management team envisioned a small group of skilled individuals who would focus exclusively on energy and water management issues. They set an ambitious goal for MEM – to reduce energy use at all Minto facilities by 20 percent over three years.

“MEM was established to lead an organization-wide effort to manage energy and water use wisely, help protect Canada’s natural resources and minimize the environmental impact of Minto’s operations,” explains Mr. Pride. “Our goal is to change the way Minto looks at energy. This is a commodity that is consumed in all of our buildings, and every unit consumed costs money and creates greenhouse gas emissions.”

The MEM division is divided into four interdependent groups:

- the Demand Side Management Group focuses on reducing water and energy consumption and GHG emissions;
- the Sustainable Group focuses on research and development of sustainable strategies for existing and new Minto buildings;
- the Energy Analysis Group is responsible for utility accounting, benchmarking and targeting; and
- the Commodity Group is responsible for commodity purchasing and strategic planning.

“Our primary objectives are to reduce the impact of Minto operations on the environment, provide a reasonable return on investment and educate our customers on energy issues,” says Mr. Pride. “We have to make a solid business case for any capital expenditures our division recommends, but since most of what we are doing is aimed at saving money or improving our assets, it’s not usually a tough sell. Basically, our company is well financed and has budgeted substantial funds for MEM to invest. Our blended return-on-investment or payback threshold is about five years on average. However, we still proceed with projects that have excellent environmental impacts and 10-year returns if they are blended with higher ROI projects.”

Focus on the Multi-Residential Portfolio

MEM’s attention has so far been focused on the multi-residential properties that MUCI manages. In recent years, these properties have incurred costs of more than \$10 million per year for water, natural gas and electricity.

“The multi-residential company was receiving more than 4000 invoices from local utilities each month, but no individual or business unit was held accountable for energy costs,” recalls Mr. Pride. “If actual consumption exceeded budget projections, it was assumed that there must be a valid reason, and Minto just paid the bills. A number of energy management initiatives had been put in place, but there was no mechanism for tracking the impact – we basically assumed that we were saving whatever the contractors told us we would save.”

Mr. Pride’s experience told him this wasn’t good enough. He believed Minto needed to have a more formal system for tracking utility consumption and costs and that the company should take a more comprehensive approach to planning and implementing energy management projects. So he set about gradually recruiting the people who could

help him get the job done. To date, the MEM team includes an energy analyst, an energy services manager, a sustainable development project designer, a residential project manager for Minto's Ottawa properties and an energy clerk, who processes all of Minto's utility bills.

The two principal energy sources used by MUCI are

- natural gas, which is used for space heating and domestic hot water; and
- electricity, which is used for lighting, space heating/cooling and auxiliary equipment (e.g., fans, pumps, elevators).

Table 1. Percentage of Utility Costs for Minto's Multi-Residential Portfolio

Utility	Percentage of Total Costs
Electricity	29.2%
Natural gas	46.2%
Water	24.6%

Pilot Project Paves the Way for Five-Year Plan

An estimated \$1 million was invested in a pilot project – energy efficiency and water conservation upgrades at a seven-building, 1800-suite highrise complex in Toronto called High Park Village, which was jointly acquired in 1999 by Minto and a Canadian pension fund. The year-long pilot project commenced within three months of the acquisition.

“Essentially, we fast-tracked a process after acquisition to make infrastructure changes at High Park Village,” explains Mr. Pride. “For example, we replaced old boilers with new, energy-efficient units and upgraded lighting in the common

areas of the buildings. We also installed variable speed drives on some auxiliary equipment, as well as an automated control system for mechanical equipment. And we installed low-flow toilets and shower heads in the tenant suites to reduce water consumption.”

As illustrated in Table 2, the High Park Village project has produced some impressive utility-cost savings. MEM projects that these improvements will reduce carbon dioxide (CO₂) emissions from the High Park Village complex by 3.14 tonnes per year, the equivalent of planting more than 342 000 new trees.

“High Park Village clearly demonstrated that this approach works and creates savings,” remarks Mr. Pride. “In fact, the project performed far better than anyone had expected. We looked at the results and decided that the next logical step was to create an energy management action plan to address the rest of the Minto residential portfolio.”

The High Park Village pilot project was followed by implementation of a \$6-million beta project in several highrise buildings in Ottawa. This project produced similar results to the pilot, reducing emissions significantly.

It was also around this time that MUCI joined the Energy Innovators Initiative, a program of Natural Resources Canada's Office of Energy Efficiency that encourages Canadian organizations in the commercial and institutional sectors to make energy efficiency investments throughout their operations in order to reduce costs and GHG emissions related to energy use. To date, more than 750 registered Energy Innovators have made commitments that will help contribute to Canada's GHG emissions reduction target under the Kyoto Protocol and yield enormous collective energy and cost savings.

MUCI has also registered its action plan with Canada's Climate Change Voluntary Challenge and Registry Inc. (VCR Inc.), a non-profit partnership between industry

Table 2. High Park Village Pilot Project

Action	Capital Cost	Cost Savings	Energy Use Savings	Other Benefits
Boiler retrofit	\$600,000	\$100,000	15%	Renewed asset and reduced maintenance costs
Controls' retrofit	\$250,000	\$35,000	Mixed	Remote monitoring capability for quick identification of problems
Installation of variable speed drives	\$70,000	\$20,000	3%	30-year-old equipment replaced with energy-efficient units
Installation of low-flow toilets and shower heads	\$320,000	\$100,000	26%	Reduced maintenance



Parkwood Hills walk-up homes

and governments across Canada whose mission is to provide the means for promoting, assessing and recognizing the effectiveness of the voluntary approach in addressing climate change.

The Energy Management Action Plan

MUCI's Energy Management Action Plan covers the five-year period from 2000 to 2004. Its stated goals are as follows:

- reduce demand for energy by 20 percent across the portfolio
- reduce GHG emissions by 13 555 tonnes of CO₂ equivalent
- apply a sustainable development approach to all new highrise construction
- ensure 100 percent accuracy of all utility invoicing and payments
- benchmark utility consumption/costs of all new acquisitions to within 5 percent of future measured performance
- achieve industry recognition of Minto as an energy and environmental leader

The Action Plan identifies three areas where improvements will help reduce utility costs. As a first step, MEM undertook to collect complete information on individual

building mechanical and electrical systems. This energy analysis will give the division a better understanding of how much energy is being used and how it is being used, and will help it develop and implement effective upgrade strategies.

As of March 2002, Minto had completed energy audits of its entire residential portfolio and started work on the second area of activity – a portfolio-wide, comprehensive retrofit of 76 multi-residential properties, requiring an investment of more than \$12 million. To guide this work, MEM has identified demand side management “best practices” for Minto-owned highrise buildings. With financial support from the Energy Innovators Initiative, these practices were initially implemented through a pilot project involving 16 buildings in Ottawa. They include

- retrofitting boilers
- upgrading lighting in common areas (old T-12 fluorescent lamps are being replaced with more energy-efficient T-8 lamps with electronic ballasts or compact fluorescent lights)
- installing variable speed drives for certain applications (e.g., corridor fans and heat pumps)
- replacing conventional toilets and shower heads with low-flow units
- installing booster pumps to deliver water to tenants more efficiently

Minto has also installed automated systems to control the new boilers and other upgrades. “I can call up these systems from any computer on the Minto local area network and see how the system is operating,” explains Mr. Pride. As well, Minto has developed a tracking process for water management and implemented a utility tracking system to record energy costs and savings.

Upon completion of the pilot project in January 2003, MEM began to replicate the best practices in the remaining multi-residential properties. This retrofit initiative will eventually encompass more than 1 million m² (10.8 million sq. ft.) of residential property, reducing energy consumption by more than 200 000 gigajoules annually and saving Minto almost \$1.8 million in energy costs per year.

The third area of activity identified in MUCI’s Energy Management Action Plan is to develop and implement an energy awareness campaign for tenants and occupants, starting in 2003. In keeping with its history of open communications, Minto will give tenants the opportunity to learn about its action plan and the steps they can take to save money, reduce energy consumption and protect the environment. “We always want to demonstrate things ourselves before asking tenants to make changes,” says Mr. Pride. “For example, we want to show them that using compact fluorescents does not change light levels. Then maybe they will consider doing the same thing inside their suites.”

The overall five-year plan will cost about \$20 million to implement, according to Mr. Pride. With an estimated ROI of 16 to 20 percent, these investments will likely pay for themselves within five to six years, which is consistent with the Minto business philosophy. After that, the company will be saving money.

“The last couple of years of the project will primarily involve monitoring, monitoring and more monitoring,” concludes Mr. Pride. “I can’t emphasize that enough. If you don’t stay on top of these changes, you start to erode the savings. You need to make sure the buildings continue to operate in an efficient manner.”

Conclusion

Mr. Pride believes that Minto is one of the first real estate companies in Canada to have a business unit focusing almost exclusively on energy management issues. Since many of the recommended capital improvements to MUCI properties are still being implemented, it is too early to determine their exact impact on energy consumption and GHG emissions. However, Mr. Pride is confident that these measures will be sufficient to meet and possibly exceed the goals set out in MUCI’s Energy Management Action Plan.

With implementation of the action plan now well underway, MEM is gradually shifting its focus to other aspects of the Minto business. For example, a demand side management “best practices” strategy has been developed for low-rise buildings and will be implemented in Ottawa in 2003 and 2004. The division is also starting to look more closely at how Minto can build new residential highrises that are more energy efficient and environmentally sustainable. Already, the MEM team has influenced the design of the 33-storey Minto Gardens rental building now under construction at Sheppard Ave. and Yonge St. in Toronto. With MEM’s early intervention at the design stage, Minto has been able to reduce the building’s energy consumption and emissions by more than 20 percent compared with typical new highrise developments. MEM is also developing a separate energy management action plan for Minto’s hotel and commercial properties and in 2004 will begin to market its energy expertise to third-party clients, such as other landlords and pension funds that own residential property.

“All of the initiatives we undertake have a strong financial driver – they make sense from a business perspective or we wouldn’t be doing them,” says Mr. Pride. “But there is also an environmental driver. I have been given a clear directive to reduce greenhouse gas emissions, but to do it intelligently. If we can reduce emissions and generate cash flow at the same time, it helps us increase our corporate assets and it helps the environment.”

Learn More

Energy Innovators Initiative

Office of Energy Efficiency
Natural Resources Canada
580 Booth Street, 18th Floor
Ottawa ON K1A 0E4
Tel.: (613) 996-6950
Fax: (613) 947-4121
E-mail: info.services@nrcan.gc.ca
Web site: oee.nrcan.gc.ca

Andrew Pride

Vice-President, Energy Management
MintoUrban Communities Inc.
2239 Yonge Street
Toronto ON M4S 2B5
Tel.: (416) 977-0777
Fax: (416) 596-3428
E-mail: apride@minto.com
Web site: www.minto.com

Leading Canadians to Energy Efficiency at Home, at Work and on the Road

The Office of Energy Efficiency of Natural Resources Canada
strengthens and expands Canada's commitment to energy efficiency
in order to help address the challenges of climate change.

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