

THE **REVOLUTION** WILL BE **AUTOMATED**

THE SMART TECH ISSUE

MISSION CONTROL

Smart buildings, automatic savings

SPOT THE WASTE

Your energy 'a-ha' moment

TAKE THAT, OUTAGES!

A reliable way to keep power flowing

PUMP PERKS

A \$10,000 upgrade, free of charge



TECH-MATE!

HOW SMART TECH SAVES ENERGY AUTOMATICALLY

The best energy management plan is one you don't have to think about.

Using smart sensors, a building automation system (BAS) can monitor, manage and instantly adjust any system that uses electricity from a single point. Having access to real-time data can save energy, uncover new ways to cut costs and keep building occupants safe and comfortable.

MONITOR > MANAGE > AUTOMATE
SMART SENSORS CONTROL ENERGY COSTS

NEW USE FOR OLD SENSORS SAVES LIBRARY \$1M/YEAR

ROBARTS LIBRARY



How has a complete rethink of a customer-counting sensor – one traditionally used in retail – transformed the way the University of Toronto controls HVAC costs?

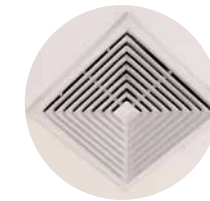
Installed at entry points, the sensors track the number of people in Robarts Library with up to 98% accuracy. Using this real-time feedback, the HVAC system can dynamically adjust to meet the requirements of each floor, keeping staff and students comfortable as they hit the books.



TOP PLACES TO TAKE CONTROL



HVAC
Adjusts comfort settings to occupancy levels.



VENTILATION
Responds to fresh air needs on demand only.



LIGHTING
Shuts off or dims automatically to prevent overlighting.



HOT WATER
Sets temperatures back automatically overnight or on weekends.



SECURITY SYSTEMS
Automatically locks entry points and turns off lights after hours.

SMOOTH OPERATOR Top benefits of BAS



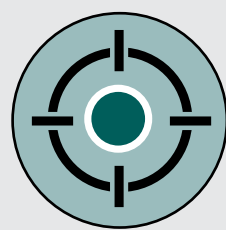
ENERGY SAVINGS

Reduce energy costs up to 30% a year building-wide from HVAC and lighting alone.



OFF-SITE CONVENIENCE

A BAS is accessible from a single source, anywhere there's an Internet connection.



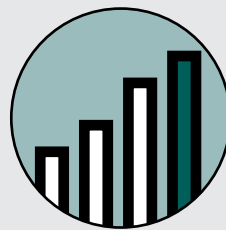
PREVENTATIVE MAINTENANCE

Detect and locate operational problems early, avoiding costly repairs down the road.



IMPROVE SECURITY

Detect security breaches, fires and emergencies from one central point.



MEASURABLE IMPACT

Collect data and track the amount of energy used – and reduced – over the years.



“We have revolutionized the use of this sensor. Now we save energy and can tailor comfort independently to each floor.”

RADU CIOTIRCA
SENIOR ENERGY MANAGER, UNIVERSITY OF TORONTO

This innovative solution has far exceeded what the team originally estimated – \$1M in annual energy savings and, as it runs autonomously, further reductions in staff and training costs. As variable frequency drives (VFDs) were also added to HVAC motors, the system is now much quieter, ideal for a study environment.

POWER PIONEERS

HOW A FIRST-OF-ITS-KIND SYSTEM SAFEGUARDS RESIDENTS



Due for a backup generator, The Grange Condominiums opted instead for a **Combined Heat & Power (CHP)** system with Brookfield's support.

As CHP applications are typically suited for much larger facilities, the micro-CHP system is designed to work on a smaller scale – a first for a residential building.

CHP systems use natural gas (or other fuel) to generate electricity on site, producing both heat and power at the same time in a very cost-efficient way. The added advantage of reliable backup power also means that The Grange's many elderly residents can enjoy heat, running water and lighting, even during a prolonged outage.

The Grange chose to contract with Magnolia Generation to finance and operate the CHP system, meaning zero upfront capital cost for the board. Participants that choose to purchase the equipment instead can typically expect a seven to 12 year simple payback, electricity cost savings of 30 to 40% and an internal rate of return of between 12 and 20%.†

†Based on current electricity prices. Costs vary depending on the complexity of the installation.

LEARN MORE ABOUT REBATES FOR CHP, VISIT torontohydro.com/CHP

HOW CAN CONDO BOARDS BENEFIT?

- 1 Building resilience**
Keep essential services operating during a prolonged outage
- 2 Increase efficiency**
Potential to reduce ongoing operating costs
- 3 Offset capital costs**
Eliminate the need for boiler replacement

INCENTIVES SPEED UP PROJECT PAYBACK

UP TO **80%**

of the costs of an engineering study

UP TO **40%**

of the project costs to implement your CHP system



SAVE AT THE PUMP

You wouldn't drive with your foot on the brake. So if your pumps are running at full capacity while restricting flow, your system is working overtime. That's energy (and money) wasted. Enter PUMPsaver, a brand new program to optimize hydronic systems, free of charge.

If you qualify, we'll install variable frequency drives (VFDs) on your building's pumps and then balance them to match your actual demand. It's a risk-free way to reduce costs without any investment from your condo board.

WHY CONDO BUILDINGS ARE LINING UP TO PARTICIPATE

IT'S FREE TO PARTICIPATE - A \$10,000 VALUE PER SITE
Includes end-to-end service by a qualified professional.

SAVE BETWEEN \$4,000 AND \$20,000* A YEAR ON ENERGY
Enjoy ongoing savings and reduced maintenance costs.

IMPROVE SYSTEM EFFICIENCY BY UP TO 35%
All pumps are metered and monitored to verify savings.

*Based on a 35% reduction in the pump's electrical consumption in a heating and cooling system and electricity costs of \$0.15/kWh.

FIND OUT IF YOU QUALIFY FOR PUMPsaver AT torontohydro.com/pumpsaver

WHAT'S THE CATCH?

NO CATCH - SEE HOW THESE BUILDINGS HAVE SAVED!



THE PINNACLE CENTRE
42 storeys at 16 Yonge St.
Added VFDs to two 50 HP pumps
\$10,572/year in electricity cost savings

PURE SPIRIT LOFTS & CONDOS
32 storeys at 33 Mill St.
Added VFDs to two 30 HP pumps
\$9,136/year in electricity cost savings

Calculations are based on an average electricity cost of \$0.15/kWh

WATCH AND LEARN

HOW TO GET A GRASP ON YOUR ELECTRICITY USE

As the old business adage goes, you can't manage what you don't measure. A monitoring and targeting (M&T) system is a smart, effective way to see how your building or facility is using energy. It provides real-time feedback so you can test, adjust, set performance targets and improve processes.

TOP BENEFITS OF MONITORING AND TARGETING



- 1 See how and where energy is being used
- 2 Detect energy waste so you can resolve issues right away
- 3 Identify opportunities to save that may not have been evident before
- 4 Quantify energy savings by measuring before-and-after results

REBATES MAKE M&T AN ATTRACTIVE INVESTMENT

IMPLEMENT AN M&T SYSTEM
Get rebates at \$0.10/kWh saved, up to 50% of project costs

HIRE AN ON-SITE ENERGY MANAGER
Get funding up to 80% of their salary



IRVING CONSUMER PRODUCTS INC.

BY THE NUMBERS

HOW IRVING TISSUE SAVED

Best known for household brands Royale and Majesta, Irving Tissue is in an energy-intensive business. In Canada, paper production accounts for almost a quarter of all energy used in manufacturing. Any efficiencies can lead to substantial savings, which is why the Toronto facility installed a plant-wide M&T system.

\$293,300
PROJECT COSTS

\$139,500
TOTAL ANNUAL COST SAVINGS

\$146,700
INCENTIVE

1 YEAR
PAYBACK

1 METER & MEASURE

Irving installed 16 electricity meters on the machines that used the most energy. Since implementation, 84% of the plant's total electricity usage is now measurable.

2 MONITOR & MANAGE

Daily reports provide feedback about unusually high (or low) electricity usage. These charts enable them to measure against targets, spot problems and quickly adjust where needed.

3 ADJUST & FIX

The reports identified that a pulper standby tank pump was needlessly running 24/7. Irving immediately reduced it to run only 1.5 hours a day, reducing energy use by 93%.

4 TEST & FINE-TUNE

Real-time feedback makes it easy to test, fine-tune and optimize processes while reducing energy consumption.



LEARN MORE ABOUT REBATES AT torontohydro.com/MandT

WE'LL TAKE CARE OF EVERYTHING

Ready to implement an energy-efficiency project?
Contact our experts to help get it off the ground.



MULTI-RESIDENTIAL

MIKE MULQUEEN

mmulqueen@torontohydro.com
416-542-3046



MUNICIPAL, ACADEMIC, SOCIAL & HEALTHCARE

DEAN ANDERSON

danderson@torontohydro.com
416-542-3382



COMMERCIAL

JENNIFER GRADO

jgrado@torontohydro.com
416-542-2640



COMBINED HEAT & POWER

GORD DAVIES

gdavies@torontohydro.com
416-542-3188



INDUSTRIAL

DILESH THURAI

dthurai@torontohydro.com
416-542-3359



NEW CONSTRUCTION

NICKOLAS LYSENKO

nlysenk@toronto.ca
416-392-6395



If you're not sure who to contact, please call our business hotline at
416-542-3388 to be connected to the Energy Expert for your business.

torontohydro.com/business



Subject to additional terms and conditions found at torontohydro.com/business. Subject to change without notice. Save on Energy is powered by the Independent Electricity System Operator and brought to you by Toronto Hydro. TMOfficial Mark of the Independent Electricity System Operator. Used under licence. TMA registered trademark of Toronto Hydro Corporation used under licence. "Toronto Hydro" means Toronto Hydro-Electric System Limited.

