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CANADIAN PROPERTY MANAGEMENT

GTA & BEYOND

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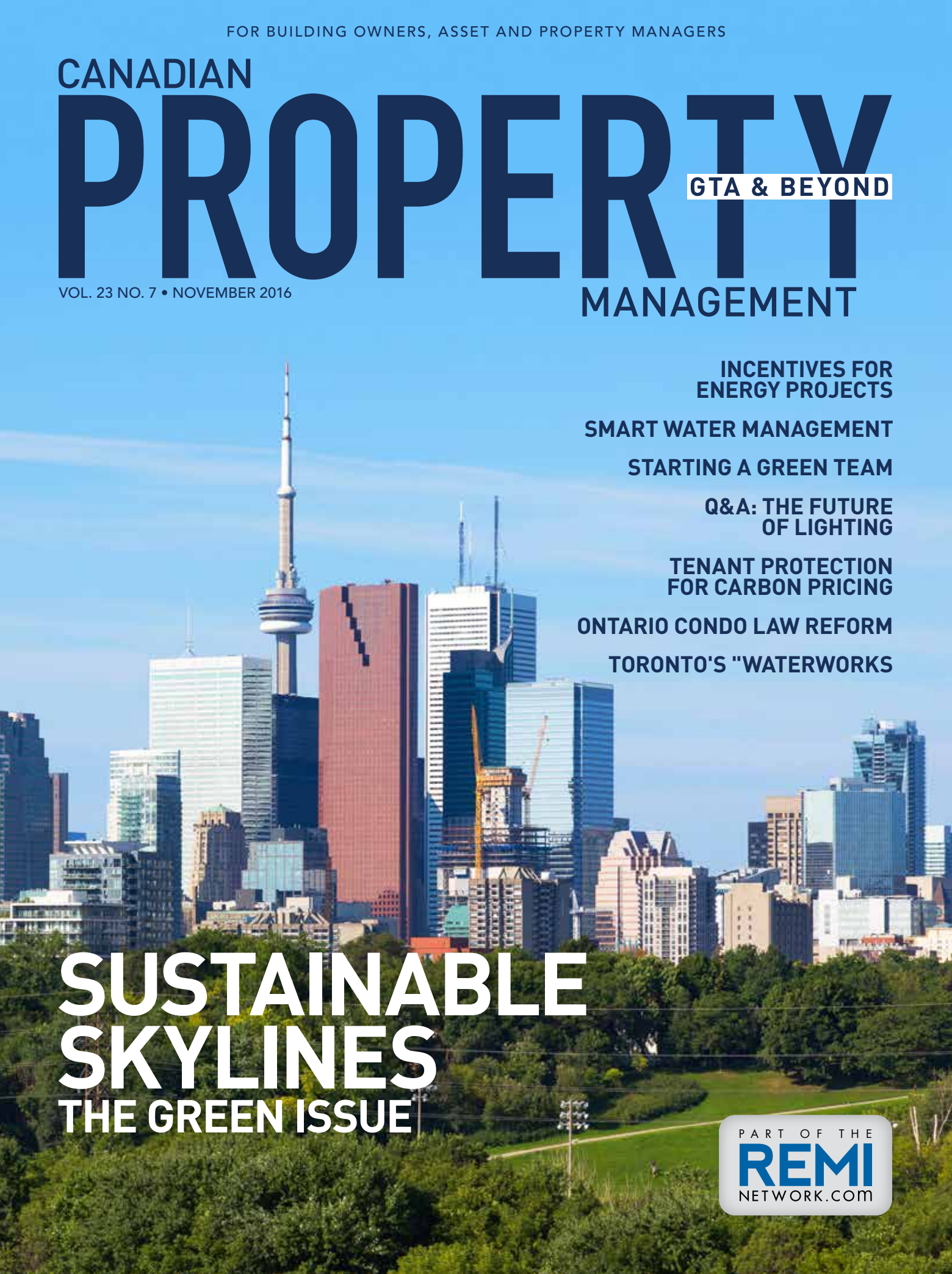

INCENTIVES FOR ENERGY PROJECTS

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STARTING A GREEN TEAM

Q&A: THE FUTURE OF LIGHTING

TENANT PROTECTION FOR CARBON PRICING

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CONTENTS

IN THIS ISSUE

10 ENERGY EFFICIENCY ON MULTPLE LEVELS
In Ontario, multi-site property managers have a range of options to kick start energy management projects.

16 SMART WATER MANAGEMENT
Strategies for conserving a vital resource (and saving money in the process)

22 STARTING A GREEN TEAM
The catalyst to climate change resiliency

26 SETTING TARGETS FOR SUSTAINABLE BUILDINGS
New tools and programs changing the business climate in York Region

30 SATISFIERS AND DELIGHTERS SELL SUSTAINABILITY
'90s Vintage Eco-Neighbourhoods Impart Lessons

36 A BETTER FIT FOR THERMAL COMFORT
Storm Windows Offer Stopgap Prior to Replacement

40 INDUSTRY Q&A: THE FUTURE OF LIGHTING
Insights and prediction from lighting industry players

NEWS

48 TENANT PROTECTION ATTACHED TO CARBON PRICING
Ontario's Climate Change Action Plan alludes to legislation or regulatory change

52 WATERWORKS TO HONOUR TORONTO'S PAST, CREATE MODERN HUB
City heritage building to be repurposed into mixed-use community develop

55 ONTARIO CONDO LAW REFORMS TO ROLL OUT AS EARLY AS SUMMER
Administrative authorities also expected to be up and running with basic services

58 INDUSTRY BRIEFS
Green headlines from the GTA (and beyond)

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BIG SHOW, BIGGER IDEAS

This is it. The big show. And in honour of The 28th Annual PM Expo, GTA & Beyond presents our largest and most ambitious issue of the year.

In our final publication of 2016, we've dedicated a majority of our ink to the people, properties, and organizations that are leading the way in industry sustainability. To help, we enlisted industry experts from across Ontario to share their eco-forward insights and stories.

In the pages ahead, we've included contributions from the Independent Electricity System Operator (IESO), who's representatives speak to the many options and incentives for energy management projects; Canadian Coalition for Green Health Care's (CCGHC) Kent Waddington, who tackles the ins-and-outs of Green Teams; ClimateWise Business Network's Iris Tufa and John McNally, with insights into York Region initiatives; and Gelderman Landscape Services's Nathan Helder, with important advice for property water conservation.

For a change of pace, we've also rounded up lighting experts and local property managers to discuss the future of lighting in one of more … illuminating? … Q&A features to date. Make sure to also read our super-sized industry news section for updates on GTA developments, regulations, and even more green industry successes.

Whether you're reading this on the PM Expo floor, or checking us out after the main event, I hope you find plenty of content within this issue to get you thinking. It may be something of a "buzzword", but there's no denying the benefits of building, maintaining, and restoring buildings with sustainability in mind.

I look forward to returning with even more GTA news in 2017. Until then, please feel free to reach out with any story ideas at matthewb@mediaedge.ca.

With a toast to what's next,

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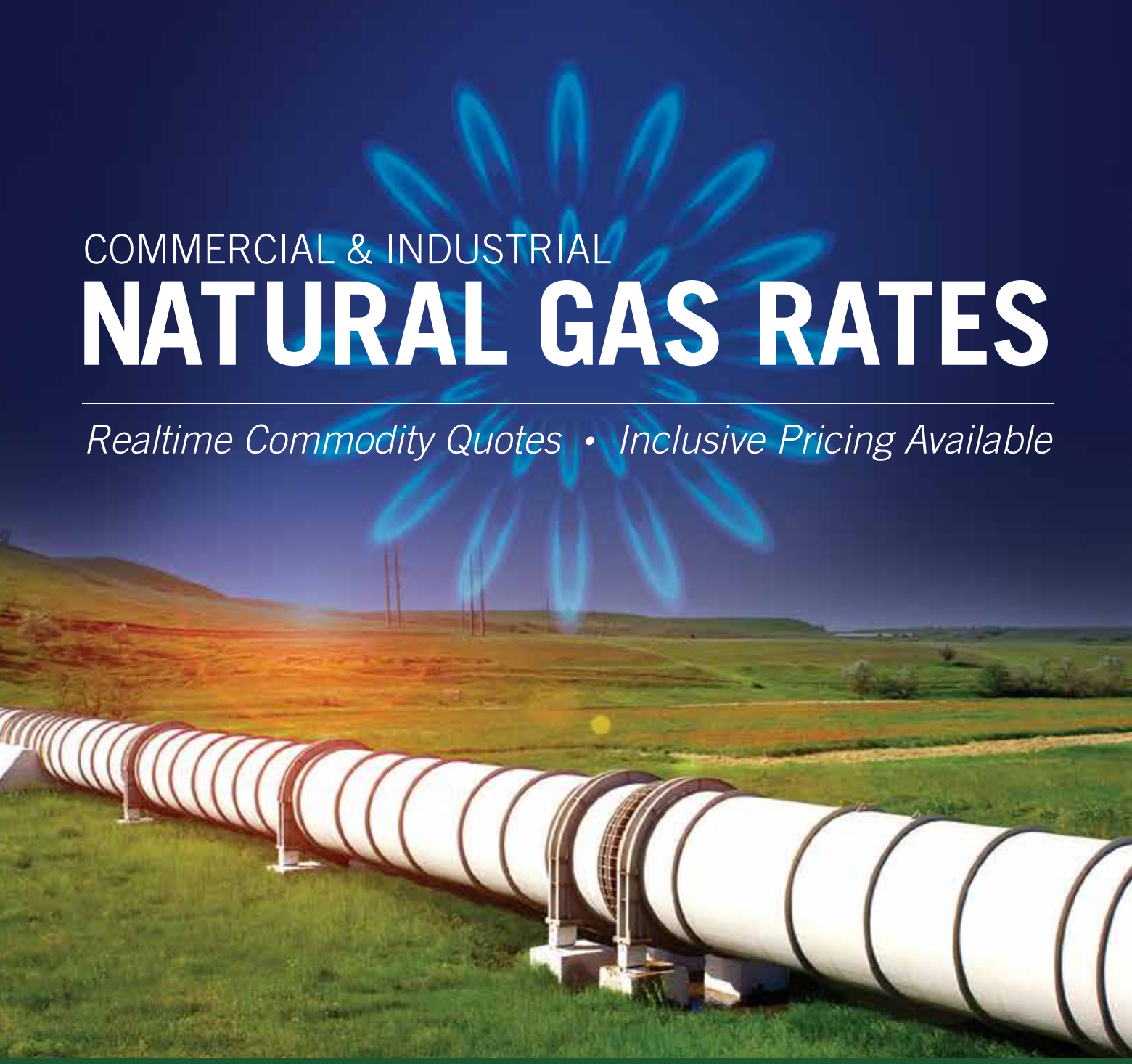

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November 2016

Condo law reforms to roll out as early as summer

Updates at the ACMO/CCI-T Condo Conference in Toronto last week clarified comments in Premier Kathleen Wynne's September mandate letter to new Minister of Government and Consumer Services Marie-France Lalonde. The letter set a fall 2017 deadline for implementing "key elements" of the Protecting Condominium Owners Act.

Acoustic performance in open-concept offices

As walls have come down in offices to create open-concept spaces, the trend has brought welcome change, such as encouraging collaboration, but it also means that the old ways of managing noise no longer work.

Living walls cultivate air quality and wellbeing

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All the Buzz

Regs likely to have minor impact on purchases

How the licensing of home inspectors in Ontario will impact condominium purchases.

From the Green Bin

ASHRAE 90.1 adds multi-res lighting proviso

LED advances factor into the 2016 update of the energy performance standard.

Expert Advice

How to eliminate window condensation

The concept of Design Dew Point could be the answer.

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ENERGY EFFICI
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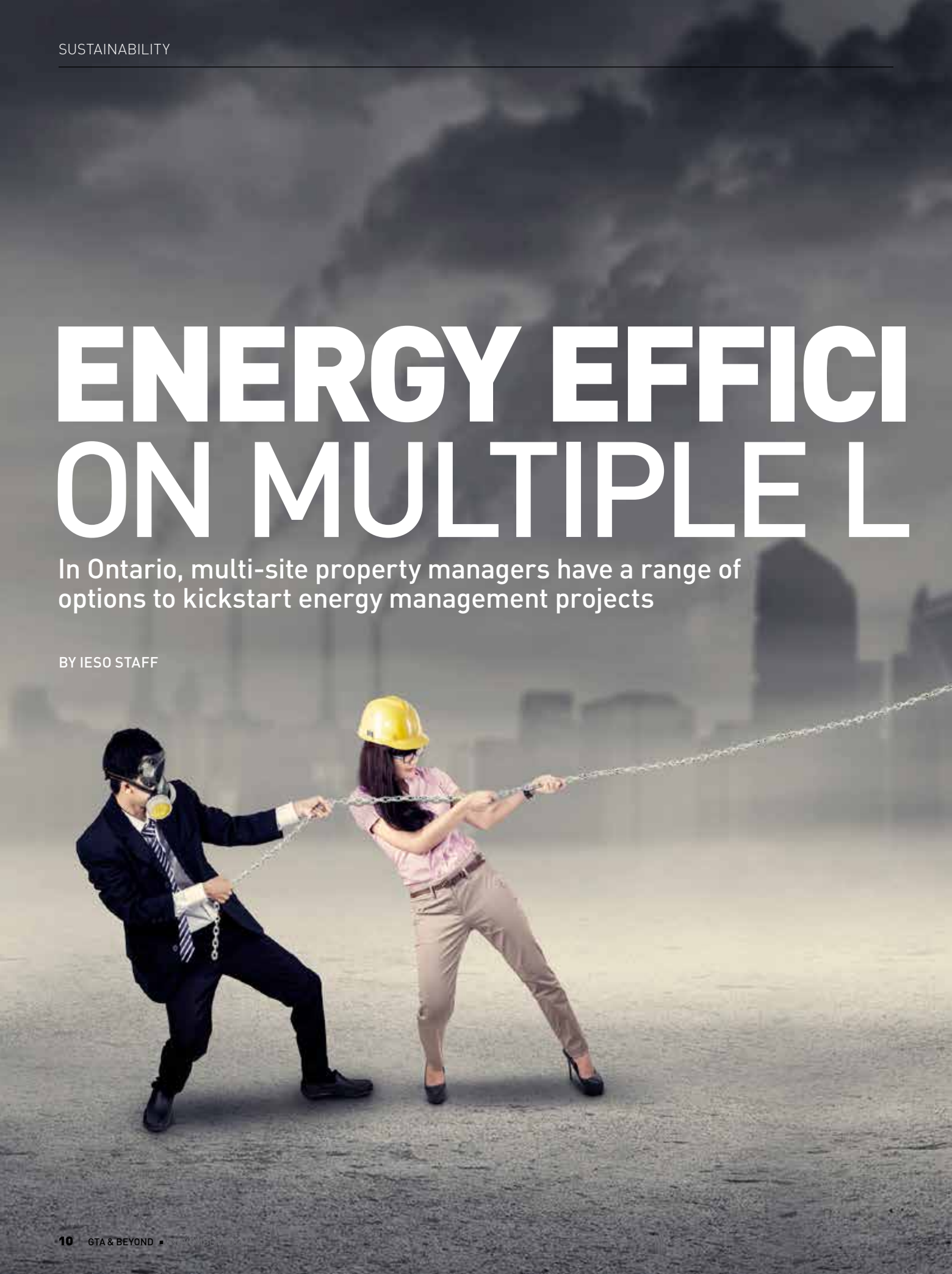
In Ontario, multi-site property managers have a range of options to kickstart energy management projects

BY IESO STAFF



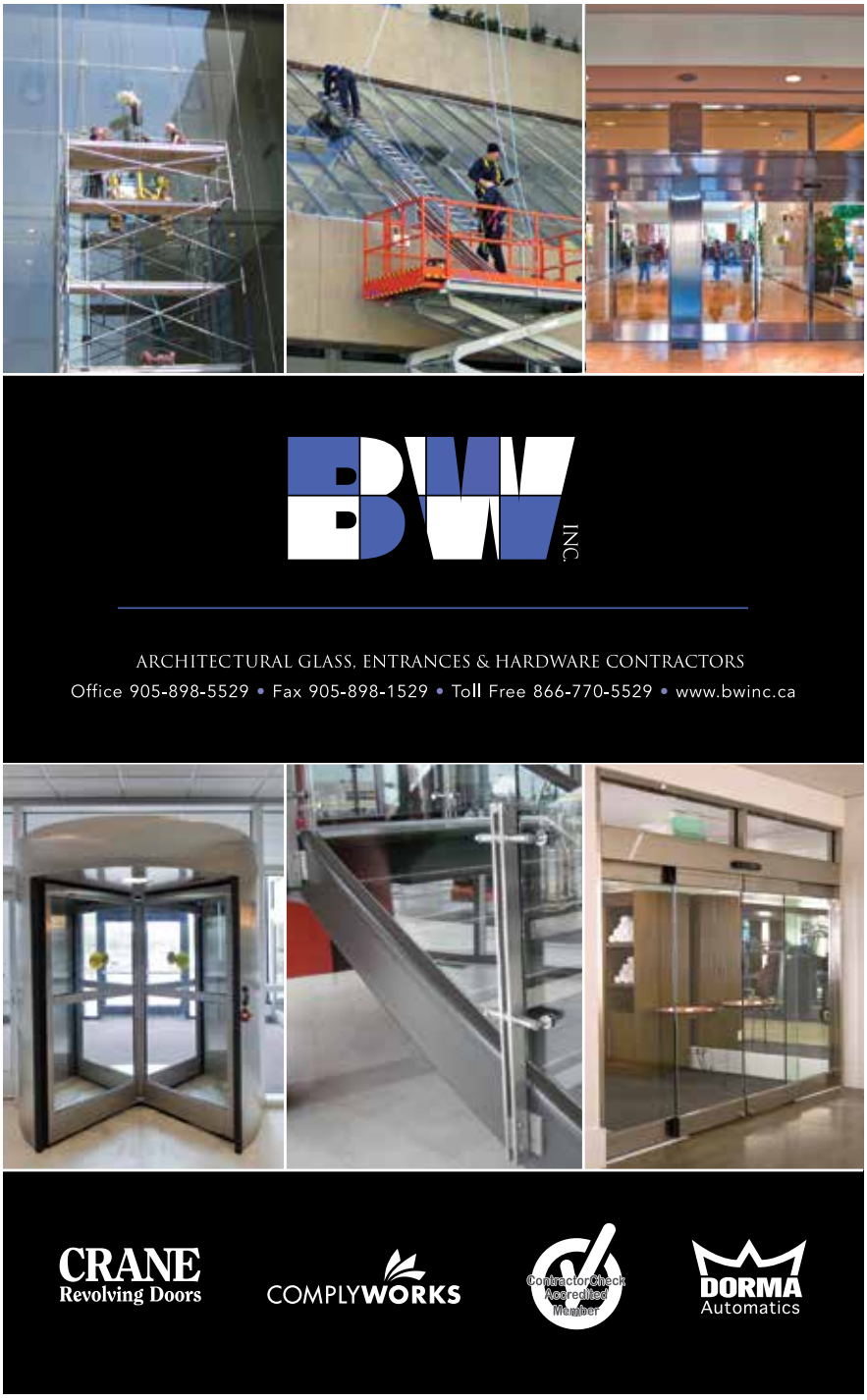
ENCY EVELS

If there was ever a prime target in the energy-efficiency business, it would be the commercial real estate companies, large retailers, and other big electricity consumers with locations spread across multiple utility service areas. While multi-site properties represent millions of square feet of real estate that needs to be lit, heated, cooled, and ventilated, they are owned and operated by a small number of receptive and interested organizations.

With more than 70 local hydro companies in Ontario, all offering Save on Energy retrofit and energy management programs, however, there is the potential for overlap. As a result, the Save on Energy program is adapting to meet the needs of multi-site customers. Not only is it streamlining the application process, it is looking to these customers to test new approaches to energy-efficiency incentives.

Multi-site customers represent less than four per cent of participants in the Save on Energy Retrofit program; yet because they account for a disproportionately large share of Ontario's building stock, they're

NOT ONLY IS THE SAVE ON ENERGY PROGRAM STREAMLINING THE APPLICATION PROCESS, IT IS LOOKING TO THESE CUSTOMERS TO TEST NEW APPROACHES TO ENERGY-EFFICIENCY INCENTIVES.



responsible for more than 30 per cent of energy savings to date.

"They're incredibly important," says Terry Young, vice-president of conservation and corporate relations at Ontario's Independent Electricity System Operator (IESO). "We've found that multi-site property owners and operators don't leave any stone unturned when looking for energy savings.

"They are extremely sophisticated in their energy management practices – using the latest technologies to monitor and control their energy use, but also straightforward common sense in their day-to-day operational practices," he adds.

As a result, the Save on Energy program has been streamlining its application processes to allow any customer with facilities in multiple LDC service areas to submit a single multi-site application. For example, the Retrofit program, which provides incentives for major upgrades such as lighting and heating, ventilation, and air conditioning (HVAC) projects, allows customers to designate a single local hydro company to lead its many multi-site projects. That local hydro company's job will be to coordinate with other affected local utilities and serve as a single point of contact for the customer.

As a complement to Retrofit, the Energy Manager program is offered both by local hydro companies for companies with facilities in just one service area, and provincially through the IESO for multi-site customers. Energy managers recommend energy-saving equipment and technologies, and have the project management skills to implement energy management strategies. The program pays customers 100 per cent of the cost of hiring a dedicated energy manager if they meet energy-reduction targets

The new option for multi-site customers, called the Energy Performance Program (EPP), represents a new offering for Ontario multi-site property owners and

operators. As mentioned, the Retrofit program is aimed at offsetting project costs – that is, the one-time purchase and installation of equipment. What it doesn't do is recognize sustained behavioural changes that affect how well facilities are run and maintained on a day-to-day basis.

"We've been missing out on the operations and maintenance savings out there," says Ian Jarvis, president of Toronto-based EnerLife Consulting, which develops and tracks conservation strategies for building owners. From his perspective, a kilowatt-hour saved is a kilowatt-hour saved.

"It shouldn't matter where those savings came from," he notes.

In an earlier pilot program under Save on Energy, the grocery retailer Loblaws implemented a variety of energy-efficiency measures in 18 of its Ontario stores. Equipment upgrades were part of it, but so too were systems process and behaviourial changes that affect daily store operations.

Instead of partially reimbursing on the cost of upgrades, the IESO paid an incentive for every kilowatt-hour of actual savings observed right at the building meter, relative to a rigorously established (and weather-adjusted) baseline.

The results were encouraging: after the first year, electricity use was reduced by more than 10 per cent, and in the second year, savings exceeded 12 per cent.

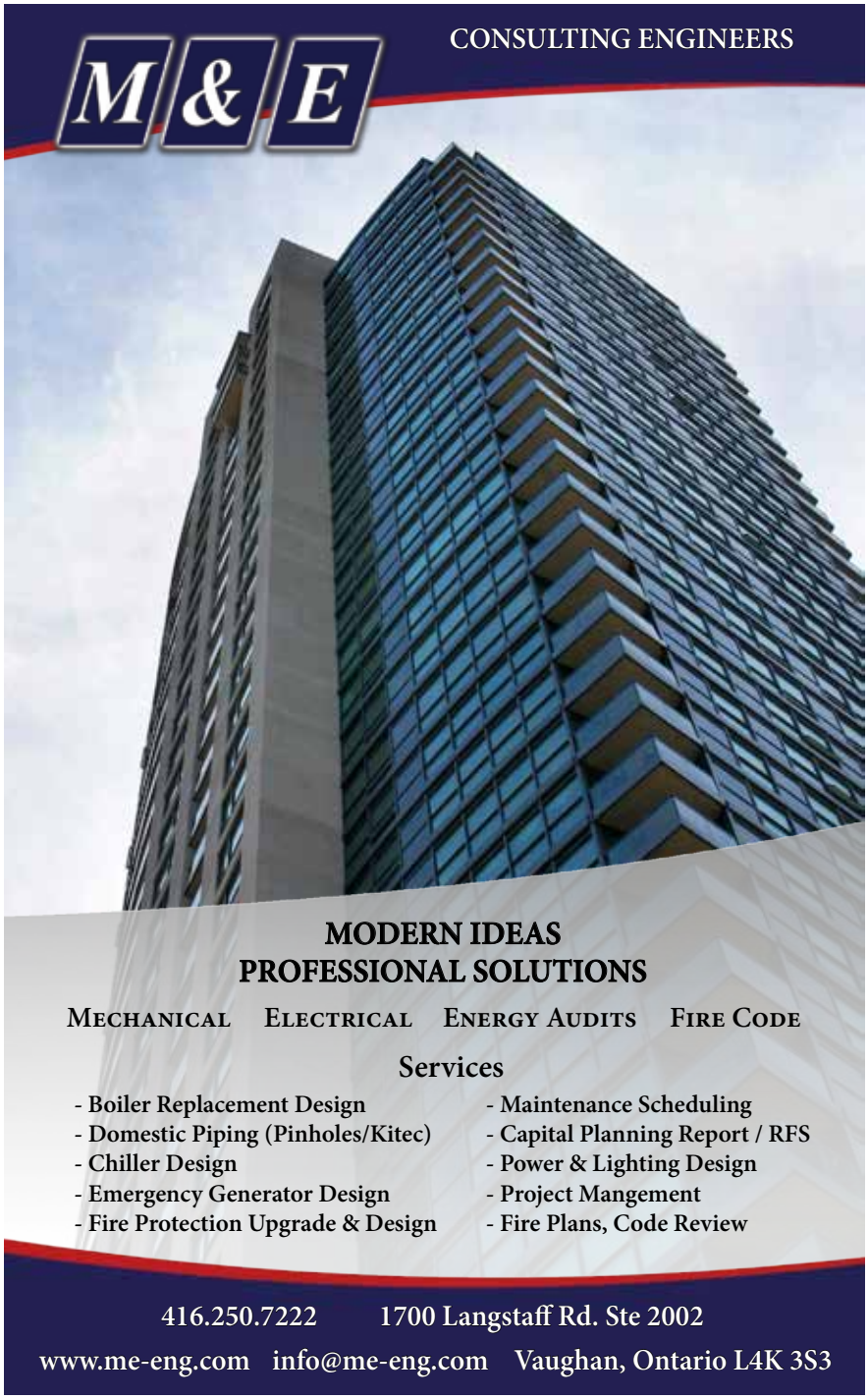
Informed from the data of that pilot project, the IESO spent the spring and summer consulting with electricity customers and local hydro companies. What emerged was the EPP, a new pay-for-performance program for multi-site customers that could very well represent the next evolution of energy conservation programs in Ontario.

"I'm excited about this program," says Andrew McAllan, senior vice-president and managing director at Oxford Properties Group, which owns and operates dozens of facilities across Ontario. "It's a smart approach that allows smart companies that are really on top of this stuff to get rewarded."

How it works is simple, which is entirely the point: a multi-site customer establishes a weather-adjusted baseline model of annual building-level electricity use that must be approved by the IESO. It then implements whatever measures it chooses, ranging from the higher-cost purchase and installation of new equipment to lower-cost investments, such as the re-commissioning of existing systems (for example, HVAC controls) to drive efficiencies from operations and maintenance.

Under the program, the IESO will pay four cents for every kilowatt-hour saved each year. Unlike the Retrofit program, the payment is tied directly to annual energy savings, not what the customer has invested. To assure such savings are permanent, the program is designed to last for four years. This means the customer receives a performance payment for savings that persist in years one, two, three and four relative to the baseline year.

"This program is for customers that are progressive and experienced with energy management. It's part of their DNA," Young says.



THE ENERGY PERFORMANCE PROGRAM (EPP) IS A NEW PAY-FOR-PERFORMANCE PROGRAM FOR MULTI-SITE CUSTOMERS THAT COULD VERY WELL REPRESENT THE NEXT EVOLUTION OF ENERGY CONSERVATION PROGRAMS IN ONTARIO.

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Data collection and analysis will be key. Increasingly, big electricity customers such as Oxford Properties are embracing a data-driven approach to building management, using sophisticated business intelligence methodologies to pinpoint where and when building performance is falling short.

"What we've learned is that you have to put the right data into the hands of the right people within the right context. We say to them, here is a daily target based on past building performance, and then we challenge building teams to beat it," says Oxford's McAllan.

And it's not a one-time effort – it's an ongoing process, says McAllan. "You have to be on it all the time. You can't let things slide, and this requires a higher level of discipline in operations."

Under existing conservation programs, multi-site electricity customers haven't been rewarded for that kind improved discipline. The EPP, as a new option, closes that gap. Other programs with similar approaches are also starting to emerge, such as Toronto Hydro's OPsaver.

The bottom line is that multi-site customers now have a number of choices: apply for Retrofit rebates for individual projects through the local hydro company that serves that facility; go with a streamlined version of the Retrofit program and work through a single local hydro company for multiple projects; or they can work through the EPP to receive incentives for actual savings achieved, regardless of where they come from. ■

THIS ARTICLE WAS PROVIDED BY THE INDEPENDENT ELECTRICITY SYSTEM OPERATOR (IESO), WHICH IN PARTNERSHIP WITH LOCAL HYDRO COMPANIES, PROVIDES INCENTIVES FOR ENERGY-EFFICIENCY INITIATIVES THROUGH THE SAVE ON ENERGY PROGRAM. FOR MORE INFORMATION, VISIT WWW.SAVEONENERGY.CA OR CONTACT YOUR LOCAL HYDRO COMPANY.

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SMART WATER MANAGEMENT

Conserving resources (and saving money in the process)

BY NATHAN HELDER

Conservationist John Muir (1838-1914) once said, "When one tugs at a single thing in nature, he finds it attached to the rest of the world."

These are wise words indeed; and when you think about it, what is more important and supportive of life than water? It's something we are surrounded by, and yet take for granted every day.

Truly, we don't really understand our water resources as well as we should. We don't always consider what happens with groundwater or runoff, where leaks occur in water transportation systems, how water is being used, or even how much energy is being used to move water into and within our homes, commercial buildings, treatment plants, or irrigation systems.

Everything we do understand points to waste; and if water isn't effectively applied or used, costs can soar.

This is why we need to take a smarter approach to water management.

IRRIGATION AUDITING: A FIRST STEP TO SMART WATER USE

Many properties have no idea how much water is being used, or how much water is required in the landscape area. Understanding this will reduce a building's water usage by 40 to 50 per cent.

First, a lot of water is wasted from inefficient or poorly maintained irrigation systems. Therefore, it is important to find out exactly how your irrigation sprinklers are performing. This is where an irrigation audit can save you a great deal of water and money, while keeping your landscape healthy and beautiful.

The best method to determine your sprinkler system's efficiency is a certified professional performing a detailed irrigation audit. Through a series of inspections, performance tests, and data

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MANY PROPERTIES HAVE NO IDEA HOW MUCH WATER IS BEING USED, OR HOW MUCH WATER IS REQUIRED IN THE LANDSCAPE AREA. UNDERSTANDING THIS WILL REDUCE A BUILDING'S WATER USAGE BY 40 TO 50 PER CENT.

collection, an audit will calculate the efficiency of your system, zone by zone. It will determine exactly how long to run your sprinklers and still keep your plants healthy, while avoiding runoff and water waste. An irrigation audit will also find faulty rain sensors, soil moisture sensors, and inefficient sprinkler heads.

Some municipalities in Ontario (Peel, York and Hamilton), in partnership with Landscape Ontario, now offer the Water Smart Irrigation Professional (WSIP) Certification Program. This program ensures water-efficient irrigation practices and system optimization. The partnership provides training, while supporting environmental protection and sustainable water use. For more on the program, go to www.peelregion.ca/watersmartpeel/wsip.

Beyond irrigation audits, however, here are some further recommendations that will save water and money:

Fix leaks. The quickest return on an investment is to fix leaking valves. Look for water running onto sidewalks or over curbs after the sprinkler system is turned off. If water flows constantly when the sprinkler system is off, that indicates a valve is not fully closing. Leaks in the mainline that go undetected continuously leak because of the absence of a master valve.

Relocate sprinklers. Lawn sprinklers should be between four and six inches (10-15 cm) from the edge of sidewalks, curbs, and patios, etc. In shrub areas, sprinklers can be 12 inches (30 cm) from the edge, especially with a mature landscape. This will reduce the amount of spray onto the paved surface and avoid a dry area along the edge of the lawn.

Change the timing. Run your irrigation system during the morning hours, especially if you use sprinklers. Less water is lost to evaporation when the temperature is cooler, and the wind

doesn't blow as hard in the mornings. Alternatively, watering in the evenings can lead to turf and plant disease problems when water sits on the plants all night, especially in humid climates.

Consider drip. Switch to drip irrigation for gardens, flower pots, and shrubs. Drip irrigation is about 20 per cent more efficient than sprinklers, is easy to install, and reasonably inexpensive.

Implement new technology. Technology has advanced over the last 20 years, introducing many new and more water efficient sprinklers. Consider switching to rotary sprinkler heads and installing master control valves. Some sprinkler head models also have built-in pressure regulators, which save water by reducing the pressure at the sprinkler head nozzle. If too much water pressure is present, the sprinklers create too much mist, allowing the wind to carry or blow small droplets away and give uneven coverage, while resulting in water waste.

As well, other sprinkler heads have built-in check valves that prevent water loss in

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TECHNOLOGY HAS ADVANCED OVER THE LAST 20 YEARS, INTRODUCING MANY NEW AND MORE WATER EFFICIENT SPRINKLERS.

lower elevation areas when the system is turned off; and some irrigation controllers come with a wind sensor to prevent operating in strong winds.

Prune plant material. Make sure tall grass, ground covers, or shrubs do not block or deflect the water out of the sprinklers. Water from sprinklers heads that pop-up less than three inches is often deflected by tall grass near the sprinkler head. When the water pattern is deflected by tall grass or leaves, it results in uneven watering and waste.

Install smart controllers. Smart controllers are an emerging technology that adjust irrigation applications based on actual weather and soil conditions. According to the Irrigation Association, "Smart controllers estimate or measure depletion of available plant moisture to operate an irrigation system that replenishes water as needed, while minimizing excess. A properly programmed smart controller makes irrigation adjustments throughout the season with minimal human intervention."

A sensor-based controller uses real-time measurements of one or more locally measured factors to adjust irrigation timing. The factors include temperature, rainfall, humidity, solar radiation, and soil moisture. A sensor-based system has historic local weather information (ET curve) programmed into memory, and then uses the information to modify the proper irrigation requirement for the day. A smart controller, like the thermostat in your furnace or AC, which turns the unit off and on based on temperature, controls the sprinkler system only when the turf and gardens need moisture.

WHAT ARE THE RESULTS?

By implementing these strategies at your property, not only will you reduce your carbon footprint with a 40-50 per cent reduction in water usage, but you'll be saving a significant amount of money (the return on investment is typically less than three years). In addition, your property's landscape will be healthier and require less input.

Now that you knowing this information, it's up to you to get smart and reduce our water use! ■

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STARTING A GREEN TEAM

The catalyst to climate change resiliency

BY KENT WADDINGTON

Forward-thinking organizations are rapidly accepting the fact that being green pays dividends and being climate change resilient keeps them in the game during times of weather calamity when the competition is busy sweeping up and asking, "What happened?"

Strong leadership can begin to address the many issues tied to greening and resiliency through a corporate Green Team which, it must be noted, needs to be fully supported by all levels of management. A Green Team, assembled from members of every department, helps companies and organizations enumerate their most pressing environmental concerns and help develop plans to address them based upon the insider knowledge each brings to the table.

In board terms, these issues include green leadership (or lack thereof), environmentally-preferred purchasing, safer chemicals, sustainable facilities, energy and water conservation, waste management, and – in some cases – healthy and sustainable food.

Properly executed, the organization becomes stronger and more resilient, the workplace becomes safer and healthier, and your corporate profile is enhanced in the minds of the stakeholders you serve because you are recognized as a sustainability leader in your community. It's a win-win-win!

BUILDING YOUR GREEN TEAM

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on your team, and harness their passion for a greener, healthier planet. You can't miss them; they're the ones who jog or bike to work, drive electric cars, sport decals from environmental organizations on their laptops and lunch boxes, and never drink from a disposable plastic water bottle.

Call a meeting, send out invites, and prepare to be amazed at the number of ideas that come forward for creating a greener organization.

Your Green Team can be as active (or inactive) as the members choose to make it. Consider the following suggestions as you formulate the Green Team within your facility and work towards a healthier planet:

Terms of Reference:

The Green Team will, through the facilitation of the team's chairperson, provide directional support to the company/organization in fulfilling its commitment to stated policy (environmental, energy conservation, sustainable development etc) by:

- **Researching** environmental, sustainability and resiliency issues facing the corporation/organization including articulating potential options and alternatives;
- **Leading** the environmental management process, inciting positive change, and improvement on environmental and climate change issues;
- **Communicating** to respective programs, departments, staff, and management on issues germane to energy environmental and climate change issues;
- **Building Enthusiasm** in staff and clients to embrace environmental programs and change;
- **Capacity Building** through educating and providing tools to manage change and initiatives;
- **Recommending** solutions for improved management of environmental and climate change issues;
- **Selling** ideas and concepts as they relate to solutions and improvements; and
- **Acting** as a resource tool to staff and management on environmental management and climate change issues.

The Green Team will be accountable to the corporate community through a reporting structure as defined by management and will be responsible for the following as part of the corporation's overall environmental management and climate change mandate:

1. Identifying potential ecological and climate change impacts;
2. Prioritizing environmental and climate change issues;
3. Identifying options for addressing high priority – or the most significant – issues;
4. Evaluating the economic and environmental impacts of options;
5. Recommending specific options for corporate approval;
6. Assisting with implementing the approved options;
7. Evaluating the effectiveness of implemented options, and making recommendations for continual improvement.

Energy conservation is often one of the first topics embraced by Green Teams with plenty of resources online to assist in the process. Most people are familiar with ENERGAY STAR for lighting, computer monitors, and printers but not everyone is aware of the magnitude of ENERGY STAR's reach which includes.

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in Canada. The list of eligible products, available at www.nrcan.gc.ca*, has grown over the years and new products continue to be added.

Then there is the *ENERGY Health Care Food Services Resource Guide – Going Green in the Kitchen with ENERGY STAR®* by the Canadian Coalition for Green Health Care. While written for the healthcare sector, the content spans sectors and is a good primer for anyone wanting to learn more about the many places ENERGY STAR products can fit in your organization.

Is waste management rather than energy a more pressing issue for your Green Team to embrace? Most communities, to some degree or another, have at least a rudimentary recycling program in place but organic waste from cafeterias and in-house kitchens is often overlooked. And while this does pose a much larger challenge for Green Teams if local infrastructure is not in place to deal with organic waste, it is good to get informed about the various options available. Check out *Taking a bite out of organic waste - Green Best Practice Case Study #6* at www.greenhealthcare.ca. This best practice paper is a great introduction to anyone embarking upon an organic waste management program or is looking to modernize an existing protocol.

ENERGY CONSERVATION IS OFTEN ONE OF THE FIRST TOPICS EMBRACED BY GREEN TEAMS WITH PLENTY OF RESOURCES ONLINE TO ASSIST IN THE PROCESS.

As the saying goes, "it ain't rocket science." Your organization is filled with opportunities to embrace environmental stewardship while increasing your resiliency to climate change. With the right encouragement from management and an open line of communications, your Green Team will thrive. Effectively communicating the team's presence and its successes will go far to engaging others in the organization to take responsibility for the issues within their control. Everyone has a part to play! ■

KENT WADDINGTON IS AN ENVIRONMENTAL COACH AND COMMUNICATIONS DIRECTOR OF THE CANADIAN COALITION FOR GREEN HEALTH CARE, CANADA'S ONLY NATIONAL GREEN HEALTH CARE ORGANIZATION DRIVING LEADERSHIP IN ENVIRONMENTALLY-SUSTAINABLE HEALTH CARE PRACTICES. LEARN MORE AT WWW.GREENHEALTHCARE.CA.

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*** http://greenhealthcare.ca/wp-content/uploads/2016/11/CCGHC-Organic-Waste-Case-Study-June17-2013-FINAL.pdf*

SETTING TARGETS FOR **SUSTAINABLE BUILDINGS**

New tools and programs changing the business climate in York Region

BY IRIS TUFA & JOHN MCNALLY

ClimateWise Business Network

Global Real Estate Sustainability Benchmark (GRESB), a data provider for environmental, social and governance (ESG) performance metrics, recently released the results of its *2016 Real Estate, Developer and Debt assessments*. One of the major findings to come from the report is a shift of focus towards carbon emissions. It was found that 75 per cent of Canadian GRESB participants have integrated carbon emissions into their ESG policy; however, only 45 per cent have set a carbon emissions target.

Target setting is the gold standard for ensuring long-term sustainability. That said, it is an apparent gap in the real estate sector and in business. The Science Based Targets initiative, a partnership between CDP, UN Global Compact, WRI, and WWF, was developed to address the importance of setting GHG emission targets that support the goal of keeping

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TARGET SETTING IS THE GOLD STANDARD FOR ENSURING LONG-TERM SUSTAINABILITY. THAT SAID, IT IS AN APPARENT GAP IN THE REAL ESTATE SECTOR AND IN BUSINESS.

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In York Region, a recent Business Energy and Emissions Profile (BEEP), commissioned by Aurora-based Windfall Ecology Centre and conducted by BC-based Climate Smart Businesses Inc., projects there are 2.3 million tonnes CO2e generated annually in the region.

The BEEP, an Ontario first, offers insights into major sectors in York Region, including office-based businesses, construction, manufacturing, wholesale trade, accommodation and food services, administrative and support, waste management and remediation services. It utilizes a growing pool of 600 baseline inventories representing over 700,000 tonnes of CO2e emissions and York Region's Statistics Canada business data to model its projections. All the energy and emissions values in the BEEP are modelled and based on industry averages.

The BEEP is publicly available via an online, open-source dashboard and report. The report also contains data on motivations for reducing carbon emissions, which strategies to reduce emissions yielded the greatest success and key case studies highlighting how industry leaders are cost-effectively reducing their emissions.

The data concluded that some of the largest emitters include the manufacturing industry, construction services, accommodation and food services, and office-based businesses. Construction services were found to account for 25 per cent of GHG emissions, with manufacturing accounting for 15 per cent and accommodation and food services responsible coming in third with 14 per cent overall. Office-based businesses were found to account for 11 per cent overall, falling just behind accommodation.

By having a snapshot of GHG emissions by industry type and sector, engagement efforts can be adjusted to address critical areas.

"This tool was commissioned in order to

get better insight into one thing currently lacking in our sector: municipal-level data." Explains Brent Kopperson, executive director of Windfall Ecology Centre. "There is a lack of municipal-level emissions data across the sector and this is invaluable in ensuring municipalities and businesses understand their emissions profiles and the real impact of their operations."

The BEEP is already being used a springboard for discussing the greening of business operations across York Region. Windfall Ecology Centre expects that data-driven communication will play a large role in informing planning around emissions and energy reduction projects and business engagement programs. More importantly, it is intended to start the conversation around target setting for GHG emissions and urge more businesses to get on board with the practice.

ENTER: THE CLIMATEWISE BUSINESS NETWORK

To address the need for target-setting and bolder climate action, Windfall Ecology Centre recently introduced the ClimateWise Business Network, a membership-based program for businesses and organizations that are committed to taking action on climate change by setting targets to reduce GHG emissions.

ClimateWise members have access to an Ontario-wide network of like-minded businesses and are supported throughout their sustainability journey with technical resources, experienced help, and premium tools such as carbon management software. In addition to helping its members set and achieve GHG reduction targets, the program features an events season consisting of educational forums and technical workshops that focus on improving sustainability in business operations.

"Becoming a founding member of ClimateWise was an obvious choice for LSRCA," said Lake Simcoe Region Conservation Authority's chief administrative officer, Mike Walters. "One of our primary corporate goals is to develop strategies that build resiliency to climate change within our watershed communities, so it makes good sense that we do everything we can to reduce our own environmental footprint."

The launch of ClimateWise is timely as there has been a significant change in the narrative of Canada's climate story

To date, it has gained significant support in York Region from the City of Vaughan, PowerStream, Lake Simcoe Region Conservation Authority (LSRCA) and the Regional Municipality of York, who are all founding members of the program. ClimateWise is one of eight Sustainability CoLab Network members across Ontario, representing the larger movement towards a low-carbon economy. Collectively, the CoLab Network members have engaged 8.9% of the local workforce and have 154 participating organizations. As of 2015, the participating organizations have reduced 23,545 tonnes CO_2e and are committed to reducing an additional 50,164 tonnes CO_2e. ■

IRIS TUFA (PROGRAM MANAGER) AND JOHN MCNALLY (COMMUNICATIONS) ARE WITH CLIMATEWISE BUSINESS NETWORK (WWW.CLIMATEWISE.CA)

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SATISFIERS AND DELIGHTERS SELL SUSTAINABILITY

'90s Vintage Eco-Neighbourhoods Impart Lessons

BY BARBARA CARSS

Some urban nodes in the Greater Toronto Area boast residential densities on par with older European cities. That may be surprising to those who aren't seeing the growth firsthand, however, since the approximately 11,800 residents per square kilometre in Toronto's central core appear much more dispersed from the national space-per-capita perspective.

"We have more than 400 people in a square kilometre and you [Canada] have 3.5," observes Professor Anke van Hal of the Delft University of Technology in the Netherlands. "So that really makes a difference."

That ratio narrows when weighing a nearly 10-million-square-kilometre land mass against the 41,500 square kilometres that comprise the Netherlands. Drilling down to the tiny fraction of Canada where people actually live, strong market demand in urban centres, and local and provincial governments' now well-established policies to promote intensification, infill and brownfield redevelopment, have helped to concentrate growth in pockets much smaller than previous norms.

This makes van Hal's research on the Netherlands' now 20+-year-old eco-neighbourhoods applicable in more than just an interesting academic way. In a presentation at the Canada Green Building Council's national conference earlier this year, she sketched out her country's experience in promoting housing developments with low environmental impact and her associated study of residents' impressions of their homes and communities.

AS PROFESSIONALS, WE THINK ENERGY EFFICIENCY IS IMPORTANT AND EVERYBODY IS FOCUSED ON IT, BUT [FOR MOST PEOPLE] IT'S NOT SO IMPORTANT.

Taking a largely unexplored approach, van Hal's work attempts to gauge what makes people happy and how these qualities might be used to make sustainable, energy-efficient housing more enticing. Her team interviewed residents of 1990s-vintage developments in search of findings that could be applied to a new era of green building technologies and environmental policy directives. This began with the premise that the greater public is generally oblivious to issues that inspire and preoccupy the green building movement.

"As professionals, we think energy efficiency is important and everybody is focused on it, but [for most people] it's not so important," van Hal acknowledged. "The idea behind this project was that people are not that much enthusiastic about sustainability, but there are other things they are enthusiastic about. If you make sustainability attractive, then people really want it."

In an effort to identify stimuli that literally light up the brain's medial prefrontal cortex – an indicator of happiness – she categorizes qualities of a living space three ways: 1) those that meet basic needs; 2) satisfiers; and 3) delighters. Shelter, warmth and cleanliness fall into the first category, while the latter two cover a wider range of sometimes subjective characteristics such as spaciousness, aesthetics, expressions of individuality and the balance between privacy and access to a view.

TECHNOLOGICAL BIAS BACKFIRES

Many satisfiers and delighters are also found outside the physical confines of a dwelling. In contrast, pioneering sustainable housing projects often placed greater priority on technological solutions, incorporating systems that in many cases have since become antiquated or obsolete.

"We became so narrowly oriented on the topic of energy and the houses," van Hal said. "But there a lot of things in public

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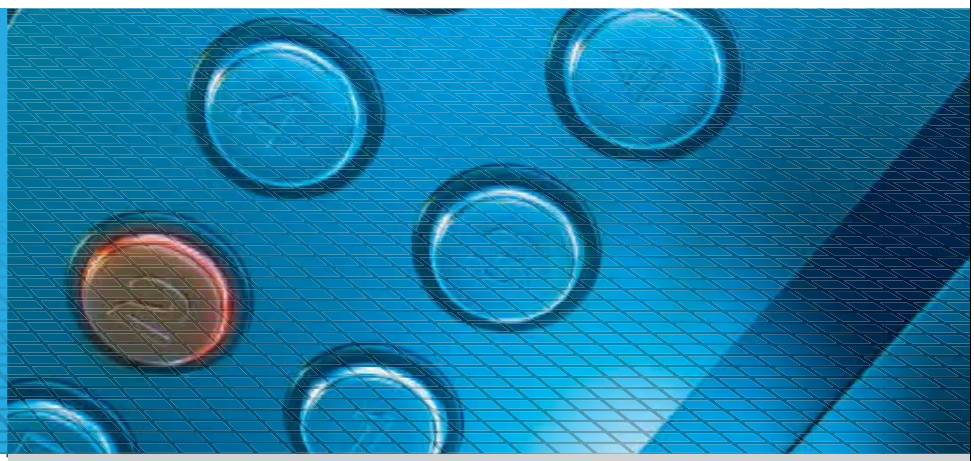

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space that are related to happiness and it's not that much money to invest."

She traced this first generation of Dutch eco-neighbourhoods to the groundbreaking UN World Commission on Environment and Development (commonly known as the Bruntland Commission), credited with introducing the concept of sustainable development. The Netherlands was one of the early supporters of the 1987 Bruntland Commission report – approved at the 1992 UN Conference in Rio de Janeiro it inspired – and produced its own report and recommendations in 1989. From there, many municipalities and other non-governmental organizations sponsored sustainable housing projects.

"We had projects all over the place, but most people thought it was extremely ugly," van Hal recalled. "It was sustainable, but it wasn't architecture."

In surveying residents of some of those projects, researchers found outdoor elements – including green space, water features, absence of through-traffic and resulting areas for neighbours to gather – continue to be popular today, whereas the dwelling spaces are not so prized.

Residents reported that installed systems, which were originally rated highly efficient, no longer function properly, but it is often difficult to replace them because of the way the housing is designed. Or, the technology of the day dictated design choices that have fallen out of favour in the intervening decades. Notably, all kitchens have a closed-wall configuration to accommodate what were then leading-edge ventilation systems.

"There are timeless measures that create quality, but many, many measures are not time-resistant, especially on a housing level," van Hal concluded.

As is often the case, attempts at social engineering also largely failed. "There were all kinds of measures that had the assumption that people would change their behaviour, but they didn't," she added.

Nor has the eco-neighbourhood label made much of an impression on today's residents. Sustainability might be marketing gold for some audiences, but van Hal theorizes that most prospective buyers or tenants don't specifically rank it on their wish lists. Instead, she urges 21st century green building strategists to think about how sustainability can flow through to the satisfiers and delighters.

"The most interesting thing was that a lot of residents didn't know they were living in an eco-neighbourhood and most weren't interested [when told so]," she reported. "Sustainability is more of a tool than a goal." ■

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A BETTER FIT FOR THERMAL COMFORT

Storm windows offer stopgap prior to replacement

BY DAVID KATZ

When many think of saving energy, they turn to conventional sustainability measures, such as changing the light bulbs or updating the mechanical system. It seems pointless though, to improve boilers, chillers and controls when a building's envelope is still leaking. The building envelope physically separates the conditioned and unconditioned environment, resisting air, water, heat, light, and noise transfer.

It's most important to consider air leakage, the type of glazing and the wall-to-window ratio. Studies have proven that buildings with a high window-to-wall ratio consistently underperform those without a high window-to-wall ratio.

Many existing buildings were constructed with low-cost windows that meet the old building codes and with heating, ventilation, and air conditioning (HVAC) equipment sized to meet the heating and cooling loss calculations for the hottest and coldest days of the year. Oversized equipment runs at much lower efficiency when it's not at full loads and therefore unnecessarily increases energy costs.

Reserve fund studies account for the cost to eventually replace the original (HVAC) equipment. However, until it comes time to complete these projects, the buildings continue to face rising energy costs due to the poorly performing windows and oversized equipment.

Strengthening the building envelope before designing the replacement equipment allows the new equipment to be right-sized so that it uses less energy. Window replacements are often overlooked as an improvement, due to high replacement

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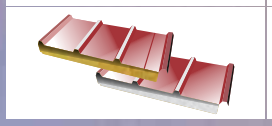

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costs. As a result, storm windows have become a common solution to improving the building envelope without replacing existing windows. Interior magnetic acrylic panels are one of the options Natural Resources Canada (NRCan) recommends in a fact sheet on its website.

The magnetic interior window panel has been marketed in the United States for more than 35 years. A 1981 test by an ASHRAE engineer showed the benefits of the additional glazing, but total window energy loss is more than just the glazing. The window frame materials, the installation in the wall and the seal between the glass and frame can also cause air leakage and heat loss. A key factor in any addition to an existing window is the way it is attached. A number of window insulation products have had mediocre results.

The first iteration of the product used double-sided adhesive tape to install the additional acrylic panel. The second iteration of the product added a sub frame and some steel strapping to give the framing magnetic edging. While these methods held the new panels in place most of the time, the air seal sometimes broke due to poor tape or magnetic adhesion, expansion and contraction of the panels. This allowed condensation to get between the warm interior and cold exterior window glazing, causing mould and energy loss.

R VALUE IMPROVEMENT

The new high-performance acrylic panels are different from previous products thanks to an improved method for sizing and fitting the custom-measured panels to each window. In recent independent laboratory tests, the new high-performance versions also met CSA standards for improving the thermal R value, reducing condensation and providing near zero leakage with the strong magnetic seal.

Reduced noise added to the benefits of energy savings and avoiding mould. It's now possible to use interior acrylic panels, among other measures, to improve comfort levels and extend the life of existing windows.

Many property managers and condo boards ask about improving windows as the Toronto Atmospheric Fund provides deep energy retrofit financing. Energy service companies are using this option, as they, too, are making deep retrofits to generate energy savings that eventually cover the upfront investment in improvements. Many utilities also offer incentives for building envelope improvements such as these. Current incentives available through Ontario's Independent Electricity System Operator (IESO) could apply to this insulation retrofit in electrically heated and cooled buildings.

To access utility incentives, it's important to establish a baseline, and then measure and verify the impact of building envelope improvements such as installing new windows and adding window film or storm windows. Commonly used energy modeling software helps estimate the heat losses and gains from different types of retrofit measures.

It's also important to evaluate and model life cycle costs and benefits. NRCan's RetScreen software has a quick feasibility calculation for building envelope improvements, including changing and improving windows.

The model confirms that the energy loss from windows differs based on the orientation of the building. Within the model, the saving on the north, east, south and west sides of the buildings

depended on the amount of glazing on each side. The more windows that face north, the more heating savings will occur.

In buildings with both heating and cooling, the differences in savings for each orientation depend on a variety of factors. The RetScreen model helps the decision maker evaluate a variety of alternatives with the objective of finding the right places to use this window improvement in large buildings.

PAYBACK

Of course, the business case is also important. A recent report by the National Trust for Historic Preservation (NTHP)/Preservation Green Lab in partnership with Cascadia Green Building Council and Ecotope, Saving Windows, Saving Money: Evaluating the Energy Performance of Window Retrofit and Replacement is worth noting. While the report's focus was on homes and historic buildings in U.S. cities, a review of the methodology and assumptions suggests that similar costs and benefits would apply to Canada and to larger buildings that lose energy through windows.

"This study builds on previous research and examines multiple window improvement options, comparing the relative energy, carbon, and cost savings of various choices across multiple climate regions," the report stated. "Results of this analysis demonstrate that a number of existing window retrofit strategies come very close to the energy performance of high-performance replacement windows at a fraction of the cost."

Gas and electricity heating have different costs and benefits, but all poorly performing windows reduce comfort, which doesn't fit easily into return on investment (ROI) or simple payback calculations. A recent study of large apartment buildings in the GTA showed that acrylic panels on old existing windows had paybacks ranging from as early as six years in electrically heated buildings to 13 years if the building had low-cost natural gas heating.

The new high-performance acrylic panels have been installed in a number of condo suites. Similar to LED lighting upgrades, condo boards can ask to test the options in a few condo suites. Then, the owners can evaluate whether they feel better and have thermographic pictures to confirm the decrease in heat loss. This will allow them to decide on interior window improvements.

If the building is sub-metered, then the energy savings and ROI will accrue to owners. If the energy is a common element, then the board may want to consider spending the reserve funds allocated to new windows on lower cost, more sustainable interior improvements to the existing windows.

Many new buildings are being designed to LEED and other sustainable building standards. However, it's critical to address the energy losses in the massive portfolio of existing condo buildings to reduce carbon emissions. This will become particularly important as Canada adopts a price on carbon via a cap-and-trade system for large emitters, as these costs will get passed on to consumers. ■

DAVID KATZ IS PRESIDENT AND CEO OF THE ENERGY MANAGEMENT CONSULTING FIRM, SUSTAINABLE ENVIRONMENTAL SOLUTIONS, AND VICE PRESIDENT OF BUSINESS DEVELOPMENT WITH MAGNETITE CANADA, A MANUFACTURER OF ACRYLIC STORM WINDOWS. FOR MORE INFORMATION, SEE THE WEBSITE AT WWW.MAGNETITECANADA.COM. THE PRECEDING ARTICLE IS REPRINTED FROM CONDOBUSINESS, NOVEMBER 2016.

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INDUSTRY Q&A: THE FUTURE OF LIGHTING

Insights and prediction from lighting industry players

BY MATT BRADFORD

Jason Prevost (JP), VP of Marketing at STANDARD Products

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What's ahead for lighting? How will new technologies light the way? Here's what some of today's industry leaders are predicting...

HOW ARE ATTITUDES TOWARDS LIGHTING AND LIGHTING DESIGN CHANGING?

JP: Lighting has now gone beyond simply using it for illumination. It is starting to drive design and aesthetics. Property managers can use LED lighting and adapt it to create a specific mood or atmosphere. So yes, property managers are realizing the potential of lighting, as well as the fact it can create a great customer experience and truly play an important role.

JP/OS: Attitudes towards lighting have definitely changed over the years as customers are becoming more aware of the significant energy savings and long life benefits that can be achieved with LED lighting. Distributors are becoming more knowledgeable and have added specialization in this area, and end user customers are also becoming more educated.

Quality, brand, and price are key factors that have shaped people's perceptions about lighting and lighting design. However, there is still a lot of training and education that needs to occur to convey the importance of good quality lighting, and to not base decisions on purely price. This is partly because a significant number of companies have entered the lighting market in the last five years, with some having limited history with lighting in general, and shared misinformation. For example, there is misrepresentation in the marketplace with regard to the benefit of direct voltage LED T8. In addition, there is a very wide range of product choices and an explosion in information that people can access today.

Lastly, customers will continue to become more demanding in getting high quality, energy saving, long life, and reliable LED lighting at the best cost value. Utilities, distributors, contractors, and end users will require strong lighting education to help cut through the misinformation to make informed decisions in their best interest regarding energy and maintenance savings, reliability, lighting performance and – most importantly – payback/ROI supported by maximizing utility incentives where available. They should look for solutions from proven manufacturers with a long history of lighting expertise. This know-how results in solid LED products that deliver long life, high efficacy, and superior quality of light.

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DS: We are in the middle of a lighting revolution. We're moving away from electric lighting and into electronic lighting, and that's as important as the shift from gas power to electric. It means the infrastructure is changing and, because of that, our skill-sets are changing too. We're re-inventing ourselves, which makes it a really fun time to be in the industry.

Thanks to this revolution, suddenly people care about lighting. Now that lighting is high tech and fun, everybody wants to engage in it. The people care more now than ever before, and they know more than ever before. In the old days, no one was talking about lumens and candelas. Now? These are conversations everybody is having.

TS: LED technology has sparked new interest about lighting among property managers. Using today's technology, owners and managers can usually realize a reasonable payback on lighting retrofits. However, we have found that these same people often buy into the concept of an LED lighting retrofit also because of the improvement in lighting quality, proper light levels, and aesthetic improvements in the space.

Overall, the initial interest in lighting retrofits among managers is related to energy savings, but these people are also interested in learning more about lighting quality and the importance of good lighting to occupants.

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HOW WILL LIGHTING TECHNOLOGIES EVOLVE OVER THE NEXT 5 TO 10 YEARS?

JP: Today, we are seeing LED products with integrated speakers and wi-fi boosters. Tomorrow, LED lamps will be able to provide what we call li-fi (aka lighting fidelity, which is essentially wi-fi but through lighting). Eventually, lighting will be used to capture and transmit data such as weather, air quality, occupation, and surveillance, among other data points.

JP/OS: Steve Jobs is quoted as saying, "Everyone here has the sense that right now is one of those moments when we are influencing the future." This is how I feel when I look at the work our company is doing with LED lighting technology and how it is evolving over the next five to ten years. Lumens per watt (LPW) will improve from the current 100 to 120 LPW range to 200 LPW, meaning products will deliver more light without needing more energy. Life ratings will improve from the current 50,000 hours to 70,000 and 100,000 hours, meaning maintenance staff will be replacing light bulbs less often, and light quality and controllability will continue to advance.

Beyond just product attributes, LED and OLED technology will continue to evolve, leading to a wide range of new applications, such as thin panels. More science will be available regarding potential health benefits of LED, such as circadian rhythms benefits for residents of hospitals and shift workers. As well, LED will become more compatible with renewable energies.

DS: It's all going to be about controls, and the light bulb is going to disappear. The latter point is huge. We're an LED light bulb business now, and we're doing

energy retrofits with lamps. All the new fits we're designing don't have a socket in them. That means there's no user serviceable parts in that lamp's fixture. So from a property manager's perspective, they're not going to have anyone on staff that's changing light bulbs. And when these light bulbs now last the length of a renovation, changing the fixtures will be part of the next renovation, but changing light bulbs will go away.

The internet of everything is going to hit light fixtures, no question. As well, we're going to see more wireless controls and power over ethernet (POE), which are fixtures powered by network cables. Once you're powered by network cables, the things you can do with controls is limitless. Lighting is going to be commissioned by computer programmers.

TS: The fast evolution and acceptance of LED technology has created massive change in the lighting industry. Over the next five years, the adoption rate of LED by the market will continue to grow. Going forward five years, I suspect that very few traditional source light fixtures will be used and luminaires will become more energy-efficient as the technology continues to evolve. Also, we're seeing a growing acceptance of imbedded lighting controls (i.e. occupancy sensors) installed within factory fixtures.

In the longer-term, there are a lot of exciting technologies being worked on by manufacturers. Light fixtures are now "smart" solid state devices that are connected to power. This allows the fixtures to be platforms for other technology. These technologies could include cameras, occupancy data, positioning, air quality, and security, to name a few. Information from the fixtures can be transferred to building operators or occupants, allowing further connectivity of the space to people and vice-versa.

WHAT TRENDS DO YOU SEE BECOMING POPULAR FOR LIGHTING RETROFITS IN THE NEXT 5 TO 10 YEARS?

JP: LED lighting has the power to be much more than just light. It will challenge the way electricians and contractors wire up homes and buildings, and it will certainly bring change to the electrical codes.

Furthermore, lighting has the ability to affect mood; so integrating lighting and its effects on the biochemical aspect

STEVE JOBS IS QUOTED AS SAYING, "EVERYONE HERE HAS THE SENSE THAT RIGHT NOW IS ONE OF THOSE MOMENTS WHEN WE ARE INFLUENCING THE FUTURE." THIS IS HOW I FEEL WHEN I LOOK AT THE WORK OUR COMPANY IS DOING WITH LED LIGHTING TECHNOLOGY AND HOW IT IS EVOLVING OVER THE NEXT FIVE TO TEN YEARS.

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PROPERTY MANAGER PERSPECTIVE

On retrofits...

In the past, a lighting retrofit was seen as a money-saving initiative. The question was, "What was the payback and ROI?" It was a light for light exchange.

Today, other factors are being taken into account. Better analysis of light requirements, additional equipment (i.e. dimmers, motion sensors, timers), and natural light source are all being considered.

This not only results in energy savings, but a better work environment for our tenants and their employees.

The ability to tie lighting systems into building automation systems BAS improves the occupants' experience, as well as reduces occupancy cost, extends the replacement cycle, provides energy reductions, and ultimately a reduction of the environmental footprint of the property.

Ken Cowan, Vice President, Risk Management & National Programs, Morguard Investments Limited

On advances in lighting technologies...

Over the next five years, LED systems and interchangeable components will continue to become more standardized in the rating and performance classification.

Fixture manufacturers are also incorporating new connection methods such as Power over Ethernet (PoE) which is part of the new "Internet of Things" movement, that sees all the devices around us being able to communicate with each other via internet and wi-fi enabled devices. This allows for individual occupants to now define the lighting in a space to meet their own unique needs.

Lastly, the efficiencies of LED technologies is always evolving and improving. Organic Light Emitting Diode (OLED) is advancing. At present OLED efficiencies are behind LED by 8 to 10 years in scale, and will likely become the next step retrofit technology after LED. This however is still at least 10 years away before they will match a market viable alternative as a general lighting application technology.

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On lighting attitudes...

Attitudes have changed quite significantly. We are looking at a lot of additional factors such as efficiency, colour rendering, durability, heat generation, and light comfort levels.

As we look to the future, I believe that comfort levels will play an even larger role; people who are more comfortable in their environment generally perform better, and better performance definitely translates positively to the bottom line.

That said, there is no doubt that efficiency and energy savings will continue to play a role as we move forward. I believe we will start to move away from retrofits and look more towards right-fits; that is, having the right type of light in the proper area and understanding how we utilize that light will continue to drive innovation in lighting design, control, and application.

Michael Ytsma, Director, Sustainability, Dream Office Management

will become popular in retrofits. Imagine an office building with lighting specifically designed to enhance alertness and performance. It's possible, and it will only get more popular.

JP/OS: In the short term, LED T8 and LED HID replacements, as well as inexpensive retrofit solutions and fixtures with basic controllability of dimming and daylight harvesting, are very popular because they can provide the energy saving and long life benefits of LED at the lowest cost. This can help provide attractive ROI paybacks that senior management can appreciate.

In addition, new advancements with wireless lighting controls, like SYLVANIA Connected Lighting, will expand lighting control to hard-to-reach locations and simplify and lower the overall cost of installation. It is a cost-effective option for retrofitting existing spaces with the latest in lighting control technology, while also reducing the complexity involved with wiring.

DS: We're going to continue seeing an increase in general knowledge, and the jobs are going to start to be done better. What's going to happen is the retrofits are going to move out of their infancy, because the products are getting better and people are starting to learn from their earlier mistakes. Generally, you're going to start seeing jobs being done better than they were in the first couple years of LED retrofits.

TS: More recently, LED light fixtures have been broadly accepted as a retrofit technology. The energy payback around this type of

retrofit can be very compelling in many cases. One trend that we expect to become even more popular, however, is around lighting controls. These are systems that make it easy to automatically turn lights off or dim when not required are now part of code for new construction in many parts of Canada. We expect that this trend will continue to spill over into the retrofit market. With many of today's modern lighting controls becoming wireless and fixture-embedded, it makes incorporating them into a retrofit project very simple and cost effective.

HOW ARE THE BENEFITS OF LIGHTING BEING PERCEIVED DIFFERENTLY NOW THAN IN YEARS PAST?

JP: 5-10 years ago, LED technology was much more expensive, less mainstream, and not as efficient. Today, LED technology has proven itself in terms of energy efficiency, long life, reduced CO2 emissions, and lower maintenance costs. LED lamp and fixture costs are also much closer to the pricing of traditional lighting sources, making it a realistic option for retrofits.

JP/OS: It is interesting that in some ways the huge market transformation from T12 to T8 fluorescents is repeating itself with T8 fluorescents to T8 LED. There is an overall greater expectation for energy and maintenance cost savings based on the awareness of these benefits of LED. Large commercial property managers are showing an increased interest and requirement in improving a building's environmental foot print. However, securing energy cost savings to help achieve the best possible ROI is the primary driver for lighting retrofit projects. Maintenance savings and the overall aesthetic feel and look of the facility are also important considerations.

The TD Centre, the original skyscrapers of Toronto's Financial District and the largest commercial complex in Canada, is a great example. At 4.3 million square feet the TD Centre, managed by the Cadillac Fairview Corporation Ltd., is one of the largest LEED Platinum certified properties in North America, in addition to being one of North America's largest business communities and home to 21,000 office employees. TD Centre replaced T8 fluorescent lighting with approximately 55,000 energy-saving and long-life SYLVANIA SubstiTUBE IPS LED Tubes, saving approximately 2,500,000 kWh annually and $250,000 per year.

DS: It all comes down to dollars, but the biggest difference we'll see is that the original retrofit program – where you save energy and costs by reducing electric energy – will remain in place, but now you'll see more people factor in reduced maintenance costs as well. So while you may see seeing energy savings, the real return on investment comes from reduced maintenance costs and not having to re-lamp the fixture.

TS: 5 to 10 years ago most of the lighting retrofit projects were either a lamp and ballast retrofit to upgrade a less efficient fluorescent fixture to the latest more efficient fluorescent technology, or a replacement of HID fixtures (usually in industrial spaces) with fluorescent.

Today, when doing a fixture replacement to LED, one can achieve better energy savings than either or the above. Secondly, there will be much less maintenance down the road, as LED fixtures do not require costly lamp replacement and are far more reliable. ■

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Ontario's Climate Change Action Plan alludes to legislation or regulatory change

BY BARBARA CARSS

Yet to be clarified language in Ontario's Climate Change Action Plan (CCAP) hints that rental housing landlords could be uniquely prohibited among bulk fossil fuel purchasers from passing cap-and-trade related costs farther down the chain of consumers.

Distributors will begin adding the cost of carbon emission allowances to the commodity price in 2017, and the Ontario government has pledged to "consult on and develop options to reduce the impact on residential tenants of increased energy costs."

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Meanwhile, rental housing owners/managers will have less room to manoeuvre within the allowable rent increase guideline, which drops to 1.5 per cent in 2017 from 2 per cent in 2016. Under existing rules, they've traditionally been able to obtain above-guideline rent increases to offset so-called extraordinary increases in electricity, gas, water, or property tax costs, but industry advocates are now pondering what the CCAP's promise for "protecting tenants from the price of carbon" might entail.

"Tenants appear to be the only group that the government is specifically proposing to protect from the impact of cap-and-trade," says Scott Andison, president and CEO of the Federation of Rental-housing Providers of Ontario. "It's not trying to protect public transit riders from higher fares. It's not telling the airlines that they have to do something to protect the airline travelling public."

It's projected carbon emission allowances will increase natural gas prices by $0.84 to $1.05 per gigajoule during the first four-year period of cap-and-trade. Electricity price add-ons could also be an issue after 2020.

Until then, designated large emitters of more than 25,000 tonnes of carbon equivalent annually — which includes gas-fired power generating plants — have been granted free emission allowances and won't be participating in the carbon market. Nevertheless, long-time industry watchers are wary of the Ontario government's unspecified musings on "legislation and/or regulatory change" and advise landlords to use this interim to pursue energy efficiency upgrades.

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Joe Hoffer, a partner and specialist in residential tenancy and municipal law with Cohen Highley LLP, speculates interventions might take the form of eliminating the above-guideline rent increase option for gas/electricity price jumps attributable to carbon pricing, or new mechanisms to transfer the future carbon price portion of electricity costs back to landlords even when suites are sub-metered. The latter would seem to address the government's aim, stated in the CCAP, that "the impact of carbon pricing is not passed on to tenants who are not able to make capital improvements to their buildings" and an earlier statement that it wants to "ensure that carbon pricing does not negatively impact tenants and that private building owners take advantage of retrofit programs."

"The idea would be to force, or at least strongly encourage, owners to minimize a building's carbon footprint and enhance energy conservation," Hoffer suggests. "Bottom line: multi-res owners who have not already done so will have to implement better energy consumption systems and practices or face increased costs which cannot be passed onto tenants."

Owners/managers who will be undertaking retrofits are also wondering how requests for above-guideline rent increases to cover capital expenditures will be treated in light of the agenda to protect tenants from flow-through costs of carbon pricing. The CCAP pledges up to $400 million over four years to help fund energy efficiency upgrades in privately owned rental housing, but this will not cover the full costs of the investments to be made.

Rental housing owners are in line to receive a more generous portion of cap-and-trade revenues than their peers in the commercial sector, and Andison foresees it will be put to good use. However, he places the promised funding in the context of the estimated $2.8 billion Ontario's private multi-residential sector already invests in maintenance and repair every year.

"The rental housing industry is in favour of anything to do with reductions of greenhouse gas emissions," Andison says, "We applaud the gesture, but if the government thinks $100 million a year for four years is going to offset the needed investment to meet this challenge, I don't think it is being realistic." ■

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WATERWORKS TO HONOUR TORONTO'S PAST, CREATE MODERN HUB

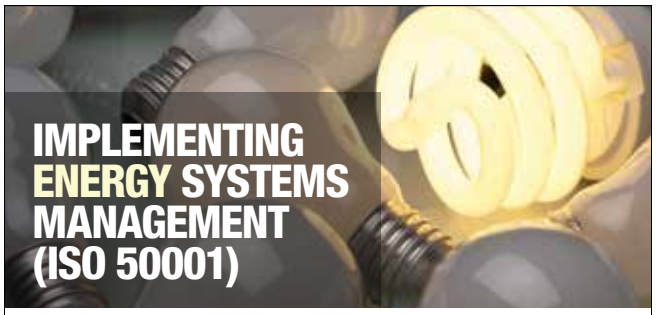
City heritage building to be repurposed into mixed-use community develop

BY KAVITA SABHARWA

A heritage building on an historic downtown Toronto site will be preserved and repurposed from an industrial facility into a mixed-use community hub to accommodate the growing residential population.

The Waterworks, designed by Diamond Schmitt Architects, brings together food-focused retail and a mid-rise wing of condominium apartments, several of which feature large private terraces and balconies. Also part of the project is a community YMCA with recreational and social facilities, which will be designed by another firm.

The Waterworks' name was chosen due to its former life as a water treatment facility that was located in a two-storey Art Deco structure built in 1932. In addition to exterior stone detailing, the development will feature a courtyard and 28,500 square-foot industrial garage that will be home to a Food Hall. This space features a 45-foot ceiling and in the 19th century, was home to the city's third largest market.



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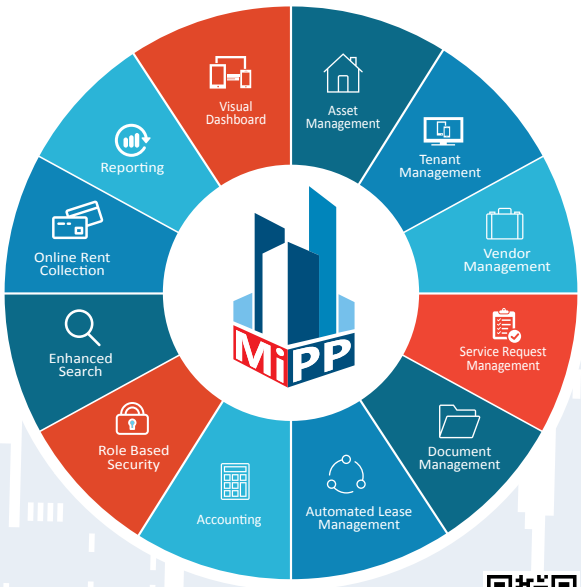

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"We are retaining almost the entirety of the structural fabric and walls for the Food Hall," said Donald Schmitt, principal at Donald Schmitt Architects, in a press release. "The building structure, skylights and ceiling elements, windows and door openings are all being refurbished and will retain much of their original materiality and detail and will define the retail public spaces and their character."

The Food Hall will open onto St. Andrew's Playground, an urban green space featuring pedestrian amenities. New public routes through the building will be created and an existing vehicular carriageway into the courtyard will be adapted to become a pedestrian mews.

The YMCA will take up the second and third floors of the development and have its own entrance from the courtyard. Ten storeys of condominium apartments with unique floor plans will call a horseshoe-shaped building home, with setbacks from the heritage structure to create terraces. An existing youth housing facility will remain in the building and some of the 299 residential units being built will be operated through a non-profit housing provider.

The project is under development by MOD Developments Inc. and Woodcliffe Landmark Properties, and is expected to open in 2020.

"We want to acknowledge the significance of the building's past, while merging it with our vision to create the heart and soul of the King West neighbourhood with a food hall, restaurants and a condominium building in a park," added Eve Lewis, president and CEO of Woodcliffe. ■

KAVITA SABHARWAL IS ONLINE EDITOR AT MEDIAEDGE COMMUNICATIONS. THIS ARTICLE WAS ORIGINALLY PUBLISHED ON THE REMI NETWORK (WWW.REMINETWORK.COM).

ONTARIO CONDO LAW REFORMS TO ROLL OUT AS EARLY AS SUMMER

Administrative authorities also expected to be up and running with basic services

BY MICHELLE ERVIN

Ontario's condo law reforms, passed late last year, are expected to start to roll out as early as next summer.

Updates at the ACMO/CCI-T Condo Conference in Toronto last week clarified comments in Premier Kathleen Wynne's September mandate letter to new Minister of Government and Consumer Services Marie-France Lalonde. The letter set a fall 2017 deadline for implementing "key elements" of the Protecting Condominium Owners Act.

"We have traveled a long way on the condo file and we are nearing the finish line," said Min. Lalonde in a pre-recorded video message to Condo Conference attendees.

The provincial government launched a public review of Ontario's outdated condo laws in 2012. Over the span of 18 months, the three-stage review identified key

WE HAVE TRAVELED A LONG WAY ON THE CONDO FILE AND WE ARE NEARING THE FINISH LINE.

issues, produced proposed solutions and received public input. Following which, the government introduced Bill 106, the Protecting Condominium Owners Act.

"The feedback received during the consultation process formed the foundation of Ontario's new condo laws, and we continue to engage condo industry experts, condominium communities and the general public as we move forward to implement this important legislation," said Min. Lalonde.

The Protecting Condominium Owners Act will reform rather than replace the Condominium Act and introduce the Condominium Management Services Act.

The existing Condominium Act will remain in force in its current form until the Protecting Condominium Owners Act, which received royal assent last December, is proclaimed into force. Before that happens, the government needs to finalize the accompanying regulations and establish two administrative authorities.

The Condominium Authority of Ontario (CAO) will provide public education, maintain a registry of the province's 10,000 condominium corporations and administer a tribunal tasked with quickly and cost-effectively settling common disputes, primarily between condominium corporations and owners. The Condominium Management Regulatory Authority of Ontario (CMRAO) will be responsible for licensing and regulating both condominium managers and condominium management companies.

"The set-up of both the authorities is well under way and we anticipate that both will be up and running and providing basic services by this summer," said Lalonde.

Formed on July 1, the not-for-profit administrative authorities have yet to be certified but have their first boards in place. They are working under the stewardship of interim executive leader Robin Dafoe, who previously served as director of corporate policy and tribunal relations at the Ministry of the Attorney General.

Aubrey LeBlanc is chair of the board of the CMRAO. LeBlanc is also the vice-chair of the interim board of the Bereavement Authority of Ontario, former CEO and registrar of Tarion, and sat on the expert panel for the Condominium Act review. Also on the CMRAO board are John Oakes, a veteran of condominium management and past president of the Association of Condominium Managers of Ontario, as well as senior public servants Joan Andrew and Gail Beggs.

Tom Wright is chair of the board of the CAO. Wright is also chair of the interim board of the Bereavement Authority of Ontario, former CEO of the Real Estate Council of Ontario and past Information and Privacy Commissioner for Ontario. Also on the CAO are dispute resolution consultant Genvieve Chornenki, Frank D'Onofrio, distinguished public servant in Ryerson University's Department of Politics and Public Administration, and condominium lawyer Armand Conant, who sat on the expert panel for the Condominium Act review.

Its work may not be visible to the public right now, but Conant assured Condo Conference attendees that ministry staff is busily drafting regulations. These anxiously awaited provisions will spell out the many "prescribed requirements" referenced in the legislation, which is designed to make future reforms easier.

"We hope — we don't have any guarantees, but we're all working very hard — that the regs will be coming out over the next number of months for our review," he said. "All stakeholders, everybody in the industry, will be invited to participate, and if everything works well, it will be law by hopefully the end of the summer or fall of 2017."

Conant added that it's also hoped that

there will be a phased transition to some aspects of the legislation and regulations.

In the meantime, participants in the Condo Conference's Rapid Fire Legal Issues panel shared some insight into what may be coming.

Conant said that the CAO's dispute resolution services could include a comprehensive online tool, modeled on similar systems in jurisdictions such as B.C. However, much like the anticipated time frames for rolling out the legislation, there are no promises.

Real estate lawyer Stephen Karr noted that Bill 106 will mandate the registering of shared facilities agreements that meet prescribed requirements. He said a likely requirement will be that separate meters be installed where possible.

Condominium lawyer James Davidson said he expected to see the regulations expand the reserve fund study period from its current minimum of 30 years to 45. There is a steep contribution increase when major replacements move from outside to inside the 30-year study period, he explained.

Whether these features and provisions materialize remains to be seen. Conant said to watch for the release of the regulations and the launch of websites for the CAO and CMRAO.

In her closing remarks, Min. Lalonde said: "There's still important work to be done as we press ahead and we are looking forward to continued collaboration with you as we move forward." ■

MICHELLE ERVIN IS THE EDITOR OF CONDOBUSINESS. THIS ARTICLE WAS ORIGINALLY PUBLISHED ON THE REMI NETWORK (WWW.REMINETWORK.COM).

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INDUSTRY BRIEFS

Green headlines from the GTA (and beyond)

CANADA GREEN BUILDING COUNCIL RELEASES ZERO CARBON BUILDINGS FRAMEWORK

On November 2, the Canada Green Building Council (CaGBC) published its Zero Carbon Buildings Framework for the assessment of highly energy efficient buildings that minimize greenhouse gas emissions. Created to aid Canada in its goal to reduce greehouse gas emissions by 30 per cent by 2030, it includes five key components for the evaluation of a building's carbon footprint:

1. A greenhouse gas intensity metric for assessing a building's emissions, calculated using regional emissions factors.
2. Energy intensity metrics to incentivize the design of highly efficient, reliable and resilient buildings.
3. A peak energy demand metric to encourage the use of "peak shaving" measures.
4. An embodied carbon metric to recognize the importance of building material lifecycle impacts.
5. A requirement that renewable energy be generated on-site or procured directly in order to ensure the addition of clean power generation

"Our focus on carbon emissions as opposed to energy in this framework flows from the increasing urgency to address climate change by reducing greenhouse gas emissions from buildings," said Thomas Mueller, President and CEO of the CaGBC. "By embarking on this important initiative, the CaGBC is providing the market with a state-of -the-art guideline and, soon, the third-party verification and support required to make net zero carbon buildings a reality in the near future." ■

Source: Canada Green Building Council (www.cagbc.org)

OTTAWA TOWER EARNS CANADA'S FIRST LEED V4 O+M CERTIFICATION

Blackwood Partners Inc. has earned Canada's first LEED v4 certification with its 14-storey office tower at 270 Albert Street in Ottawa earning Gold under the LEED for Building Operations and Maintenance: Existing Buildings (LEED O+M: Existing Buildings) rating system.

"Projects like 270 Albert set a strong example of leadership in action," says Mark Hutchinson, vice-president of Green Building Programs for the CaGBC. "They demonstrate how LEED v4 is providing project teams with a rigorous set of requirements and guidelines that, when successful, can lead a 40-year-old building to become a top-performer, saving energy and thereby reducing carbon and combating climate change."

The 164,000 sq. ft. office tower has underwent significant sustainability upgrades since its construction in 1975. And while the multi-tenant building was already operating efficiently when an energy audit was conducted in 2013, with this LEED v4 Gold certification the operations team was able to improve the building's energy performance further by 25 per cent, resulting in an energy use intensity of 20 ekWh/sf and an ENERGY STAR score that placed the building in the 91st percentile amongst its peers.

"Blackwood Partners is confident that the LEED v4 O+M Gold certification of 270 Albert Street is an opportunity to elevate the building in the downtown Ottawa marketplace by reinforcing the owner's commitment to sustainable practices and supporting the green initiatives of our tenants within their workplace," says Peter L. Stafl, vice-president of leasing and asset management for Blackwood Partners Inc. ■

Source: REMI Network (www.reminetwork.com)

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SUZUKI AND CBSR CAMPAIGN FOR TORONTO PARKING LEVY

The David Suzuki Foundation and the Canadian Business for Social Responsibility (CBSR) launched a campaign urging Toronto Mayor John Tory to back a proposed commercial parking levy.

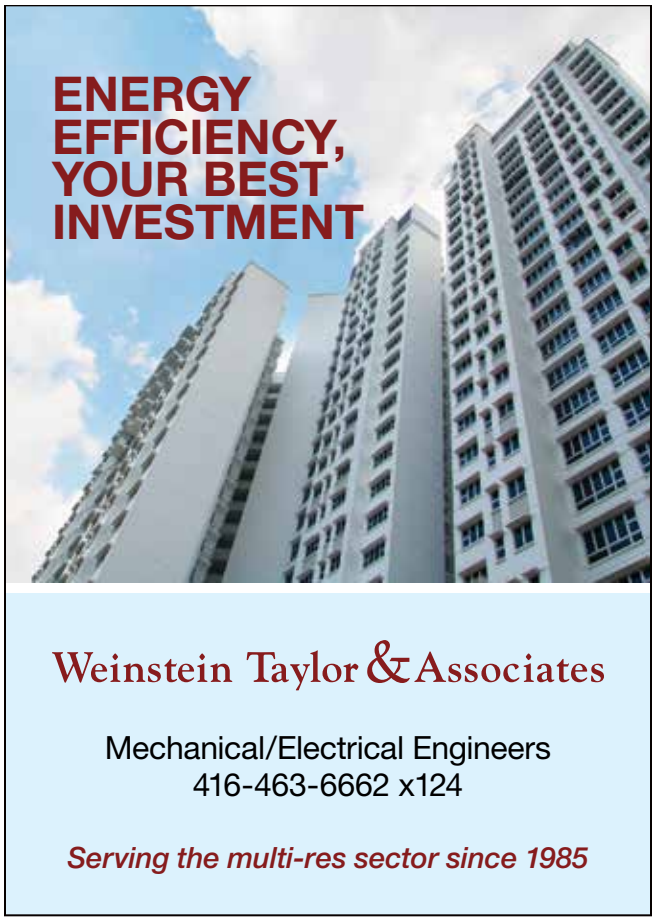
The levy is one of many revenue-generating tools suggested in a recent report, *Enhancing Toronto's Business Climate – It's Everybody's Business*. Suzuki's campaign says there is research to suggest such a tool could generate up to $535 million per year for the city.

"The projected amount per parking spot is modest — about $1.50 a day — but collectively this money could be very significant for the city," said David Suzuki Foundation transportation analyst Gideon Forman. "It would let us avoid fare hikes and improve TTC service, while addressing climate change and relieving congestion."

The campaign includes a subway ad and an online initiatives encouraging Toronto citizens to contact Mayor Tory in support of the levy.

Suzuki and CBSR represent strong voice for the parking levy; however, the initiative has its share of detractors. Real Property Association of Canada (REALpac), for one, launched a campaign of its own arguing the levy would negatively impact Toronto businesses and tenants and create an unnecessarily complex system. Read its perspective in GTA&B's October issue. ■

Source: David Suzuki Foundation (www.davidsuzuki.org)



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GREEN ROOFS FOR HEALTHY CITIES ANNOUNCES 2016 AWARD WINNERS

This October, Green Roofs for Healthy Cities, a non-profit organization dedicated to celebrating outstanding contributions to the green roof and wall industry in North America, announced the recipients of its 14th Annual Awards of Excellence. They include:

- Extensive Industrial/Commercial Award: Project: Alberta Ecoroof (Calgary, AB) / Recipient: Green T Design
- Extensive Institutional Award: Project: Bridgepoint Active Healthcare (Toronto, ON) Recipient: Stantec Architecture / KPMB Architects / HDR Architecture / Diamond Schmitt Architects / PFS Studio / MBTW Group
- Extensive Residential Award: Project: Williamsburg Condominium (Brooklyn, NY) / Recipient: New York Green Roofs
- Intensive Industrial/Commercial Award: Project: Tech Deck (Mountain View, CA) / Recipient: Bionic Landscape
- Intensive Institutional: Project: Urban Farming at the Trent (Peterborough, ON) / Recipient: ZinCo Canada
- Internal Green Wall Award: Project: Edmonton Federal Building (Edmonton, AB) / Recipient: Nedlaw Living Walls
- Small Scale Residential Award: Project: Edgeland Residence (Austin, TX) / Recipient: Ecosystem Design Group/Lady Bird Johnson Wildflower Center
- Special Recognition Award: Project: The Javits Center Green Roof (New York, NY) / Recipient FXFOWLE Epstein
- Advertising Design Award: Recipient: Architek Sustainable Building Products, Inc
- Civic Award: Recipients: Hamid Karimi, PhD, Deputy Director, Natural Resources Administration, DC Department of Energy & Environment and the DC Department of Energy & Environment
- Research Award: Recipient: Richard K. Sutton, PhD
- President's Corporate Award: Recipient: Oscar Warmerdam, Sempergreen®/Purple-Roof ■

Source: REMI Network (www.reminetwork.com)

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BOMA TORONTO MEETS WITH OEB

The Building Owners and Managers Association (BOMA) of Toronto set a meeting with the Ontario Energy Board (OED) to table issues pertaining to sustainability and the commercial real estate industry.

Topics included electricity rates and billing, grid innovation, carbon pricing, global adjustment, and environmental programs.

"This discussion is part of an ongoing effort by BOMA Toronto to advocate on energy-related policies and issues impacting our industry, as well as achieve greater levels of transparency, understanding and collaboration," reported Susan Allen, President, BOMA Toronto.

The OEB praised BOMA's for bringing its members' concerns to the fore, with its vice president of Consumer Protection and Industry Performance Brian Hewson noting, "We look forward to engaging in further discussion." ■

Source: BOMA Toronto (www.bomatoronto.org)

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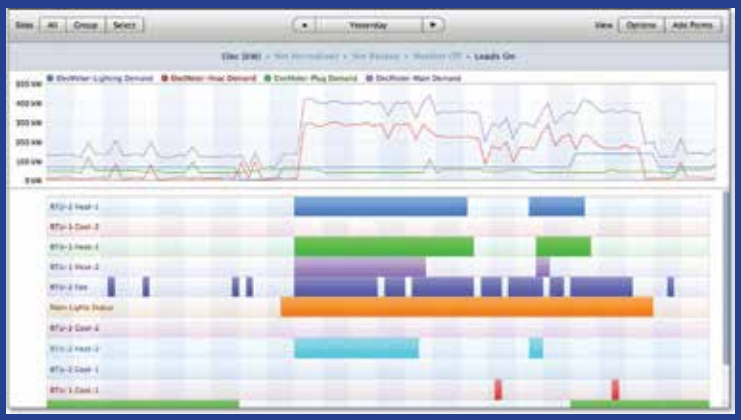

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