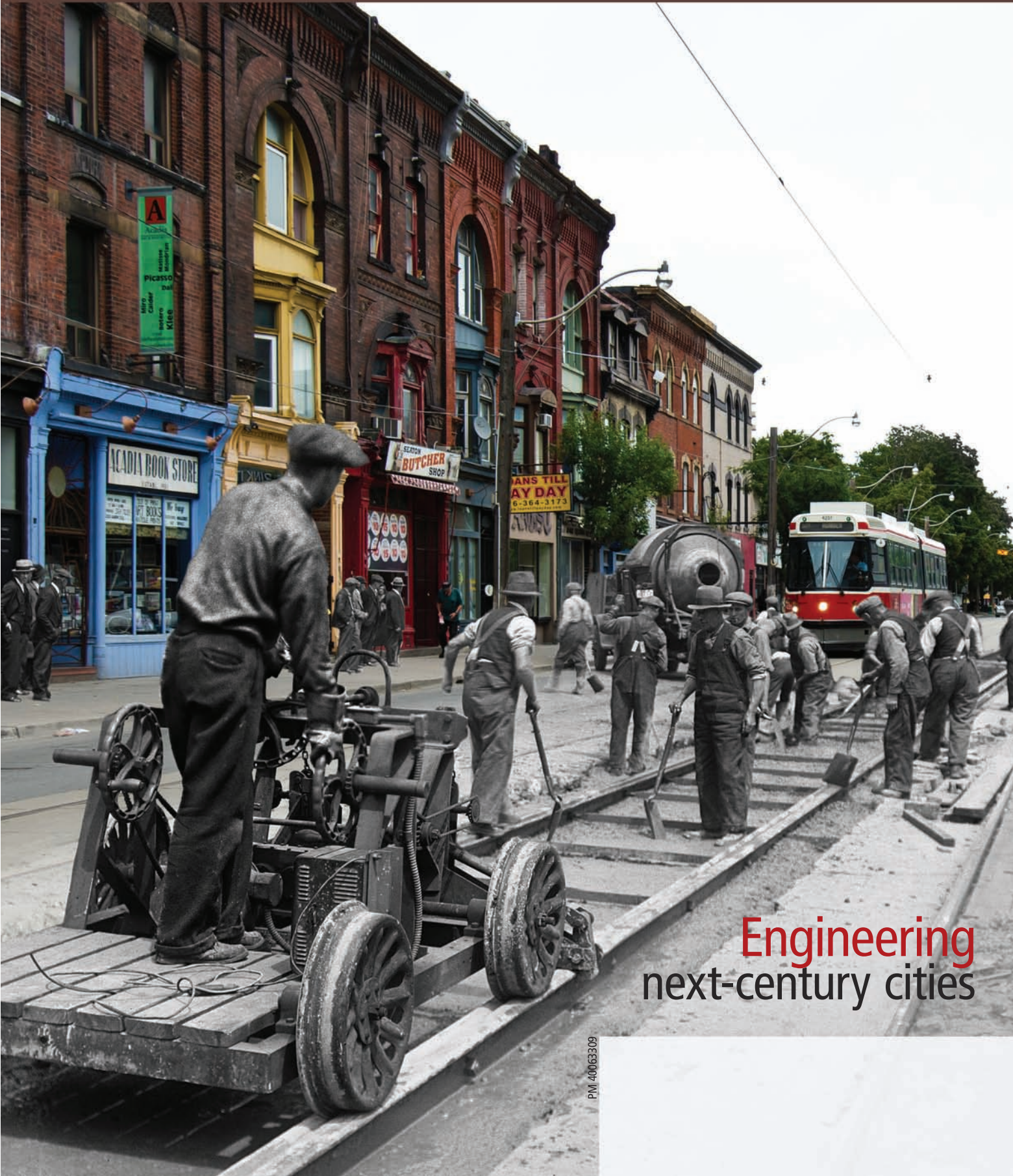




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NOVEMBER/DECEMBER 2014



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## 【 PRESIDENT'S MESSAGE 】

### WITH A LITTLE HELP FROM MY (OUR) FRIENDS



J. David Adams, P.Eng.,  
FEC, President

FOLLOWING THIS recognizable tag line from an old Beatles song, I'm pleased to report the progress we're making on your behalf on several initiatives.

PEO plans to submit to Premier Kathleen Wynne a formal request to select from a list of 100 new technologies those that current manufacturers in Ontario consider compatible with their operations and warrant start-up status.

PEO will thereby help create academic and experience requirements for licensing that will enhance employment opportunities for engineers and create funds to help finance the planned 2015 provincial government budget.

PEO participated in a meeting on Canada's position in world trade called by the Hon. Edward Fast, federal minister of international trade, to seek more industrial activity in Ontario.

Following the meeting, I wrote Minister Fast requesting the government's list of international funding contacts and Canadian trade representatives in India, to further our joint initiative with India, and to participate in their redevelopment of infrastructure, which could enhance manufacturing opportunities in Ontario.

The PEO president and registrar, together with PEO's directors on the Engineers Canada board, were invited to a meeting in Ottawa to listen to the Department of Citizenship and Immigration's plan to bring engineers to Canada. Engineers Canada wishes to act as a clearing house for this activity. It is soliciting the support of its provincial constituent members for it to become a designated agency for foreign credential assessment. Engineers Canada would then select a third-party assessment agency to authenticate all documents and conduct the initial assessments.

At the conclusion of the presentation by Hon. Costas Menegakis, MP, parliamentary secretary to the minister of citizenship and immigration, I asked him, as your president, whether PEO could be appointed one of the third-party assessors. I followed up by email on October 4, as follows: "With respect to your present immigration initiative, Professional Engineers Ontario (PEO) has been performing credential assessments of foreign-trained engineering graduates for many years. We presently have a well-structured process, using several hundred member volunteers to evaluate academic and experience requirements of internationally trained engineers. This we do to fulfill the requirements of our *Professional Engineers Act* in Ontario. In total, PEO has approximately 80,000 licensed members.

"In executing this duty, PEO looks to exempt from technical examinations those internationally trained engineers from signatories to the Washington Accord, whose academic qualifications are accredited in their respective countries and who comply with this accord.

"Because of our expertise in diverse practice and the language capability of many of our members, PEO would be pleased to assist in the acceptance evaluations for your present fast track immigration program, especially for those you choose to send to Ontario.

"As I mentioned after your presentation in Ottawa, I would very much like to discuss our involvement in your program at your office in either Ottawa or your constituency office in Richmond Hill. Should you wish to visit us at PEO headquarters at 40 Sheppard Ave. West, Toronto, you would be most welcome.

"Thank you for your time in consideration of this request."

Further to my email of October 4, above, it is my understanding Engineers Canada, in an October 7 memo to the constituent associations' CEOs, added the following conditions to candidate assessments:

"Prior to submitting our proposal to Citizenship and Immigration, we (Engineers Canada) will ask you to confirm your association's willingness and available capacity to assess degrees of applicants who have been initially assessed as having the equivalent of a Canadian engineering degree. We will also ask you to provide the wording for any specific disclaimer your association may wish to communicate to the applicant regarding ECA (Educational Credential Assessment) findings and meeting the academic requirement for licensure in your jurisdiction when the assessment has been performed by a fellow engineering regulator."

In the matter of licence approval, as set out in the *Ontario Labour Mobility Act*, PEO must, at this time, grant a P.Eng. licence to any applicant who applies to practise from another province, in a matter of a day or two.

The registrar and I will keep all councillors and members informed, as these important measures are discussed.

Closer to home, Councillor Roger Jones, P.Eng., Ravi Gupta, PhD, P.Eng., FEC, and I, in consultation with Registrar Gerard McDonald, P.Eng., have prepared terms of reference for the Program and Capital Review Subcommittee of the Finance Committee. This new subcommittee will review and monitor the 2015 operating and capital budgets with respect to all costs; return on investment; utility value and annual impacts of the current year strategic plan; projected building expenditures on renovations and restoring vacated space; and reusing and/or repurposing HVAC equipment, back-up generators, etc.

Other sizeable expenditures planned for 2015 are in the IT area, related to the Aptify licensing and SharePoint systems, each to cost \$350,000 in 2015 to raise the effectiveness and efficiency of day-to-day PEO operations in servicing members.

Zero-based monitoring for budget line operations will be developed wherever possible. And, rates of expenditure for budget line items will be measured throughout the year.

Please feel free to contact me on any of these important items and bring your concerns to my attention. Thank you. Σ

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# ENGINEERING DIMENSIONS

## PUBLICATIONS STAFF

**Publisher**  
Connie Mucklestone  
416-840-1061  
cmucklestone@peo.on.ca

**Editor**  
Jennifer Coombes  
416-840-1062  
jcoombes@peo.on.ca

**Associate editor**  
Michael Mastromatteo  
416-840-1098  
mmastromatteo@peo.on.ca

**Associate editor**  
Nicole Axworthy  
416-840-1093  
naxworthy@peo.on.ca

**Senior graphic designer**  
Stephanie Katchmar  
416-840-1063  
skatchmar@peo.on.ca

**Graphic designer**  
Cindy Reichle  
416-840-1067  
creichle@peo.on.ca

## ADVERTISING SALES

**Sales manager**  
Beth Kukkonen  
bkukkonen@dvtail.com  
Fiona Persaud  
fpersaud@dvtail.com

Dovetail Communications  
30 East Beaver Creek Road  
Suite 202  
Richmond Hill, ON  
L4B 1J2  
Tel: 905-886-6640  
Fax: 905-886-6615

## PEO COUNCIL & EXECUTIVE STAFF

### OFFICERS

**President**  
J. David Adams, P.Eng., MBA, FEC  
daveadams@peo.on.ca

**Past president**  
Annette Bergeron, P.Eng., MBA, FEC  
abergeron@peo.on.ca

**President-elect**  
Thomas Chong, MSc, P.Eng., FEC, PMP  
thomas.chong@rogers.com

**Vice president (elected)**  
George Comrie, MEng, P.Eng., CMC, FEC  
gcomrie@peo.on.ca

**Vice president (appointed)**  
Michael Wesa, P.Eng., FEC  
michael@wesa.peo.on.ca

**Executive members**  
Nicholas Colucci, P.Eng., MBA, FEC  
ncolucci@peo.on.ca  
Rebecca Huang, LLB, MBA  
rhuang@foglers.com

Robert Willson, P.Eng.  
rwillson@peo.on.ca

### COUNCILLORS

**Councillors-at-large**  
Roydon A. Fraser, PhD, P.Eng., FEC  
rafraser@uwaterloo.ca

Roger Jones, P.Eng., MBA, SMIEEE  
rjones@peo.on.ca

Bob Dony, PhD, P.Eng., FIET, FEC  
bdony@peo.on.ca

**Northern Region councillors**  
Michael Wesa, P.Eng., FEC  
michael@wesa.peo.on.ca

Serge Robert, P.Eng.  
srobert@peo.on.ca

**Eastern Region councillors**  
David Brown, P.Eng., BDS, C.E.T.  
dbrown@peo.on.ca

Charles M. Kidd, P.Eng., FEC  
ckidd@peo.on.ca

**East Central Region councillors**  
Changiz Sadr, P.Eng., FEC, CTP,  
CTME, ITILv3  
csadr@peo.on.ca  
Nicholas Colucci, P.Eng., MBA, FEC  
ncolucci@peo.on.ca

**Western Region councillors**  
Ewald Kuczera, MSc, P.Eng.  
ekuczera@peo.on.ca

Len C. King, P.Eng., FEC  
lking@peo.on.ca

**West Central Region councillors**  
Robert Willson, P.Eng.  
rwillson@peo.on.ca

Danny Chui, P.Eng., FEC  
dchui@peo.on.ca

**Lieutenant governor-in-council appointees**  
Ishwar Bhatia, MEng, P.Eng., FEC  
ibhatia@peo.on.ca

Santosh K. Gupta, PhD, MEng,  
P.Eng., FEC  
sgupta@peo.on.ca

Richard J. Hilton, P.Eng.  
rhilton@peo.on.ca

Rebecca Huang, LLB, MBA  
rhuang@foglers.com

Vassilios Kossta  
vkossta@peo.on.ca

Mary Long-Irwin  
mirwin@peo.on.ca

Sharon Reid, C.Tech  
sreid@peo.on.ca

Chris D. Roney, P.Eng., BDS, FEC  
croney@peo.on.ca

Rakesh K. Shreewastav, P.Eng., AVS  
rshreewastav@peo.on.ca

Marilyn Spink, P.Eng.  
mspink@peo.on.ca

Martha Stauch, MEd  
mstauch@peo.on.ca

## ENGINEERS CANADA DIRECTORS

Annette Bergeron, P.Eng., FEC  
abergeron@peo.on.ca

George Comrie, P.Eng., FEC  
gcomrie@peo.on.ca

Diane Freeman, P.Eng., FEC  
dfreeman@peo.on.ca

Chris D. Roney, P.Eng., BDS, FEC  
croney@peo.on.ca

Rakesh Shreewastav, P.Eng., AVS, FEC  
rshreewastav@peo.on.ca

**Registrar**  
Gerard McDonald, MBA, P.Eng.  
gmcdonald@peo.on.ca

**Deputy registrar, licensing and finance**  
Michael Price, MBA, P.Eng., FEC  
mprice@peo.on.ca

**Deputy registrar, regulatory compliance**  
Linda Latham, P.Eng.  
llatham@peo.on.ca

**Deputy registrar, tribunals and regulatory affairs**  
Johnny Zuccon, P.Eng., FEC  
jzuccon@peo.on.ca

**Chief administrative officer**  
Scott Clark, B.Comm, LLB, FEC (Hon)  
sclark@peo.on.ca



**Professional Engineers  
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THIS ISSUE: Public infrastructure continues its rise to the top of the policy-making agenda and it is bringing big changes to the way civil engineers, in particular, do business. We also remember in this issue the 25th anniversary of the Montreal massacre and reflect on the engineering community's progress on the road to inclusiveness and diversity.

ON THE COVER: "Queen East 1934/2011" from the TorontoTIME series by Harry Echin. Enchin is an award-winning, photo-based artist who uses archival city images to create new moments in time that bridge decades.

### ENFORCEMENT HOTLINE

Please report any person or company you suspect is practising engineering illegally or illegally using engineering titles. Call the PEO enforcement hotline at 416-224-9528, ext. 1444 or 800-339-3716, ext. 1444. Or email enforcement@peo.on.ca.

Through the *Professional Engineers Act*, Professional Engineers Ontario governs licence and certificate holders and regulates professional engineering in Ontario to serve and protect the public.

# CALLING FOR CHANGE



Jennifer Coombes  
Editor

**THE INVESTIGATION** into the partial collapse of the Algo Centre Mall in June 2012 concluded October 15 with the release of the long-awaited report of the Elliot Lake Commission of Inquiry ([www.elliottlakeinquiry.ca](http://www.elliottlakeinquiry.ca)). The great news for the association is that most of the recommendations PEO made to Commissioner Bélanger were included in his report (p. 8). PEO had been an active participant in Part I of the inquiry, offering 11 recommendations to improve the regulation of engineering and the safety of the province's existing buildings, including a proposed new performance standard for structural inspections. PEO Registrar Gerard McDonald, P.Eng., says, "We believe implementing these recommendations...will strengthen engineering practice in Ontario and help prevent similar tragedies from occurring."

The report was released just before this issue went to press, so we'll have to wait until our January/February 2015 issue to fully dissect its content and discuss how each party the commissioner has tasked with action in the recommendations proposes to implement them.

These days, the frail state of the province's infrastructure is also top of mind with engineers and high on just about every municipal government's priority list. And, according to Ghani Razaqpur, PhD, P.Eng., a McMaster University civil engineering professor, it makes sense that coming up with smart, sustainable renewal strategies should fall to engineers. "We need participation from the broad engineering community... The actual design and implementation to make [public infrastructure] durable and sustainable falls squarely within the purview of engineering," he says. "Regrettably...the engineer often plays a secondary role with regard to planning and decision making."

Michael Mastromatteo explores how engineering practice will have to adapt to tackle 21st century infrastructure challenges in "Complex infrastructure needs require new engineering approaches" (p. 32).

This December 6 marks the 25th anniversary of the terrible day that saw the lives of 14 young women at Montreal's l'École Polytechnique cut short.

Tragic events such as this are often a catalyst for change. This one was no exception. In "L'École Polytechnique 25 years later: What's changed? What hasn't?" (p. 42), Michael Mastromatteo looks at some of the positive things that have come out of this tragedy, including hearings conducted by the Canadian Committee on Women in Engineering that produced 29 recommendations for recruiting women into engineering, a national day of remembrance, the Canadian Engineering Memorial Foundation scholarships, NSERC chairs for women in the professions and the Women in Engineering Advisory Committee.

Yet, some, including former PEO president Patrick Quinn, P.Eng., FEC, who for many years has been an outspoken advocate for women in engineering, says not enough is being done to welcome women to the profession. He shares his thoughts about that fateful December day (p. 46) and his disappointment in what he feels is a lack of progress in the support of women in engineering in the years since.

Council elections are coming up in January and, once again, PEO is looking for a few good women and men to serve as president-elect, vice president, councillor-at-large and regional councillors in PEO's five regions.

Full details of what's required to throw your hat in the ring for these positions is outlined in the 2015 council elections call for candidates, voting procedures and election publicity procedures, starting on page 51. Σ

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Address all communications to The Editor, *Engineering Dimensions*, PEO, 40 Sheppard Avenue West, Suite 101, Toronto, ON M2N 6K9. Tel: 416-840-1062, 800-339-3716. Fax: 416-224-9525, 800-268-0496. US office of publication, Adrienne & Associates, 866 Humboldt Parkway, Buffalo, NY 14211.

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 Contact: Nicole Axworthy, 416-840-1093, [naxworthy@peo.on.ca](mailto:naxworthy@peo.on.ca)  
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## ELLIOT LAKE COMMISSION RELEASES REPORT, ADOPTS MANY PEO RECOMMENDATIONS

By Michael Mastromatteo



Ontario’s engineering regulator is pleased most of its recommendations to strengthen regulation of engineering and improve building safety have made their way into the final report of the Elliot Lake Commission of Inquiry into the fatal 2012 collapse at the Algo Centre Mall in Elliot Lake, Ontario.

The massive, two-volume report was released in Elliot Lake on October 15. Part I of the report, containing 33 recommendations, details the chain of events leading up to the partial collapse of the mall’s rooftop parking deck, which killed two Elliot Lake residents, injured 19 others and caused severe economic disruption to the small, northwestern Ontario community.

The report’s Part II focused on first response, emergency management and recovery efforts. It includes 27 recommendations.

In the report, Commissioner Paul Bélanger described the events leading up to the June 23 event as a “human failure” that was enabled by a regime of neglect and indifference by the mall’s owners, inspectors, and municipal and provincial officials.

PEO Registrar Gerard McDonald, P.Eng., says he was gratified to see many of the recommendations put forward in PEO’s submission to the inquiry included in the final report.

“We believe implementing these recommendations, in addition to the others made by the commissioner that apply to our profession, will strengthen engineering practice in Ontario and help prevent similar tragedies from occurring,” McDonald says.

Described by Elliot Lake residents as “Algo Falls,” the mall had a long history of leaks. A forensic engineering investigation of cause of the collapse cited severe corrosion of a connection between a beam and a column supporting the roof-top parking lot as the main reason for the collapse.

A now-former engineer with a Sault Ste. Marie-based firm had described the mall as structurally sound just weeks before the collapse. The former engineer’s licence was under suspension for an unrelated matter at the time of the inspection and was revoked by PEO in November 2012 in connection with that matter. In January, the Ontario Provincial Police charged the former engineer with criminal negligence causing death and criminal negligence causing bodily injury.

PEO is continuing its investigations into whether work by PEO licence holders related to the mall was performed competently and in compliance with the regulations under the *Professional Engineers Act*, as well as other applicable statutes, regulations, standards, codes, bylaws and rules.

In its submission to the commission as a party with standing, PEO made 11 recommendations, and participated in invited expert roundtable discussions in November 2013 to help guide the commission’s final recommendations.

The PEO recommendations ultimately endorsed by the commissioner include:

- developing a new performance standard for structural inspections of existing buildings, based on PEO’s existing practice bulletin;
- mandating that a structural adequacy report of existing buildings be prepared and sealed by professional engineers who are certified as structural engineering specialists; and
- releasing additional information about PEO practitioners disciplined for professional misconduct.

PEO Councillor Chris Roney, P.Eng., FEC, BDS, a member of PEO’s Elliot Lake Advisory Committee, was pleased the commissioner endorsed “almost all” of the PEO recommendations, and that the Ministry of the Attorney General (which is responsible for the *Professional Engineers Act*) has already expressed a willingness to work with the engineering regulator to implement its recommendations.

“Our Elliot Lake Advisory Committee will be reviewing the commissioner’s report in detail to provide advice to PEO council as we work to implement these recommendations,” Roney says. “We will be looking to the Ministry of the Attorney General and the provincial government to receive the tools for improvement related to recommendations that were not endorsed specifically by the commissioner.”

Although not proposed by PEO, the commissioner recommends the regulator establish a system of mandatory continuing professional education for its licence holders as soon as possible and no later than 18 months from the issuance of the report.

Roney notes that PEO has already established a task force to make recommendations by the end of 2015 on developing a continuing professional development program for PEO.

In summarizing his report, Bélanger criticized a host of players for doing little to prevent the eventual collapse, including some of the engineers involved. “Some engineers forgot the moral and



ethical foundation of the vocation and profession—to hold paramount the safety, health and protection of the public,” Bélanger said in his summary. “They occasionally pandered more to their clients’ sensitivities than to their professional obligation to expose the logical and scientific consequences of their observations. Some of their inspections were so cursory and incomplete as to be essentially meaningless. Others were fundamentally flawed because they were based on false assumptions or calculations.”

Roney notes that immediately after the collapse, PEO began looking “into what lessons could be learned that would improve how we regulate engineering to prevent a tragedy like this from happening again.”

The report recommends that PEO issue a clear direction to members that the contents of engineering reports should not be altered, except based on “sound engineering principles or changed facts.” It also recommends that PEO members directly and promptly inform clients if their licences are suspended or revoked as a result of disciplinary actions related to structural stability of buildings or where public health, safety or welfare was put at risk.

The report also recommends:

- the province establish minimum standards of structural maintenance for all buildings in Ontario;
- building owners be required to ensure their buildings are inspected periodically by professional engineers to determine compliance with the minimum structural maintenance standards and the necessary steps to bring non-compliant buildings into compliance;
- structural adequacy reports be filed on a publicly accessible registry and reports for non-compliant buildings be provided to chief building officials;
- chief building officials have authority to issue orders requiring repairs of non-compliant buildings, including deadlines for the repairs, and be required to file the orders on the public registry and follow up on them; and
- existing standards for training and certification of building officials and inspectors under the *Building Code Act* be amended to require mandatory continuing education.

“For PEO, the path forward is clear,” Roney says. “We will continue the work we already have underway to implement our recommendations, although now we will have the added benefit that the government also sees this as a priority. PEO does have the authority to develop standards and regulatory change, [but] we can’t implement it without the government’s concurrence.”

## PEO looks to persuade MANUFACTURERS OF NEED FOR REPEAL

By Michael Mastromatteo

ONTARIO’S ENGINEERING REGULATOR has reached out to the Canadian Manufacturers and Exporters (CME) in an effort to resolve differences related to the repeal of the industrial exception.

The exception, section 12(3)(a) of the *Professional Engineers Act*, allows certain acts of engineering in an industrial setting to be done by non-licensed employees.

The exception was slated initially for repeal in March 2013 and then in September 2013, following approval by the legislature in October 2010 as part of the *Open for Business Act, 2010*. In June 2013, however, the province abandoned the September date and has yet to set a new one.

Since then, PEO has continued to work with individual manufacturers, manufacturers’ associations, other industry stakeholders and the province to have a new implementation date set.

Some Ontario manufacturing associations are opposed to the repeal, saying it will increase labour costs for their members and force many non-licensed employees to seek licensing by PEO.

At the request of PEO Registrar Gerard McDonald, P.Eng., officials of the Ontario branch of the CME came to PEO September 12 to discuss the matter.

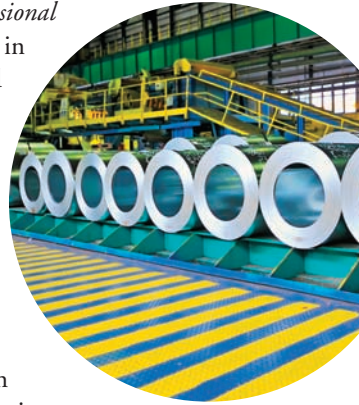
Representing CME were Ontario Vice President Ian Howcroft and Policy Director Paul Clipsham. Representing PEO were McDonald, Marisa Sterling, P.Eng., enforcement manager and project leader for PEO’s repeal efforts, and Howard Brown, PEO government relations consultant.

Since June 2013, PEO has stepped up its argument that allowing the exception to remain in force represents a safety gap for workers in manufacturing settings. The regulator has been working with safety and health organizations and the labour ministry to gather statistics about the rates and root causes of workplace accidents and injuries.

Earlier in the summer, Sterling met with Ontario’s chief prevention officer, George Gritzotis, to discuss the industrial exception. Gritzotis made note of accident rate statistics and suggested PEO work with the Workplace Safety and Insurance Board and the Association of Workers’ Compensation Boards of Canada to reconcile the numbers with other workplace safety data.

PEO is looking for CME agreement on the statistical data as a starting point in reducing fatalities and injuries in Ontario workplaces.

As of October 28, PEO is awaiting CME’s response to the meeting.



## PEO STILL CONCERNED about *Building Code Act* AMENDMENT'S UNINTENDED CONSEQUENCES

By Michael Mastromatteo



PEO IS CONTINUING to try to resolve a misunderstanding relating to the role of chief building officials under the *Building Code Act*.

As reported in September, PEO is concerned about an amendment to the *Building Code Act* that lists the conditions under which chief building officials (CBOs) may refuse to issue building permits (“*Building Code Act* amendment raises red flag for PEO,” September/October 2014, p. 8).

Although unintended, according to the municipal affairs and housing minister, the amendment to allow CBOs to refuse to issue permits “where the *Architects Act* or the *Professional Engineers Act* requires that the proposed construction of the building be designed by an architect or a professional engineer or a combination of both and the proposed construction is not so designed” seems to give authority to CBOs to decide on matters statutorily left to engineers or architects.

PEO Registrar Gerard McDonald, P.Eng., along with Deputy Registrar, Tribunals and Regulatory Affairs Johnny Zuccon, P.Eng., FEC, and Policy and Professional Affairs Director Bernard Ennis, P.Eng., met housing ministry officials September 2 to review the situation.

The trio also met with Consulting Engineers of Ontario CEO Barry Steinberg, P.Eng., September 23 to consider joint efforts.

At the September 2 meeting, McDonald cited a July 7 letter by Minister of Municipal Affairs and Housing Ted McMeekin, which states the amendment is not intended to allow CBOs to make determinations about allocating design work between engineers and architects. However, at the same meeting, the head of the Ontario Building Officials Association maintained they must be allowed to decide when a project requires engineers or architects.

By seemingly allowing CBOs to allocate design activities between engineers and architects, the amendment would provide CBOs authority to decide what is the practice of architecture and what is the practice of professional engineering, which a 2007 judicial review found is the purview of the regulatory bodies.

## PEO confirms members of CPD TASK FORCE

By Michael Mastromatteo

PEO has finalized membership of a task force to make recommendations in the area of continuing professional development and quality assurance.

The 11-member Continuing Professional Development, Competency and Quality Assurance Task Force (CPDCQATF), whose members were approved by council in June, includes PEO President David Adams, P.Eng., FEC, and Past President Annette Bergeron, P.Eng., FEC.

PEO council approved terms of reference for the task force at its March meeting. The terms call for the task force to develop a comprehensive program with “a strong focus on competency.”

In addition to the main task force, PEO created a review network of 54 engineers at various career stages in employment sectors including consulting services, in-house



employment, manufacturing, academe, government employment, sole practitioners and retirees.

Bernard Ennis, P.Eng., PEO director, policy and professional affairs, says there was great interest among the membership in

participating on the CPDCQATF, and applicants who weren't selected to sit on the task force were invited to join the review network.

Review network volunteers will be given the opportunity to read and comment on all material produced by the main task force.

At its inaugural meeting September 19, the committee elected Bergeron as chair, with Councillor Chris Roney, P.Eng., FEC, BDS, elected vice chair.

The committee is to make its recommendations for a PEO program to council by December 2015.



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## Environment ministry seeks improved RSC submissions

By Sheldon MacNeil

**R**ecord of site condition (RCS) submissions by professional engineers and professional geoscientists require appropriate knowledge, training and attention to detail. The Ontario Ministry of the Environment and Climate Change (MOECC) is encouraging qualified persons (QPs) to improve the quality of their RSC submissions.

Requirements for an RSC and the supporting environmental site assessments are outlined in O.Reg 153/04 and Part XV.1 of the *Environmental Protection Act*. The regulation requires specific activities be undertaken by QPs (i.e. professional engineers and professional geoscientists) who are preparing the environmental site assessment reports.

MOECC continues to find deficiencies in the more than 1000 RSC submissions it receives annually. In some cases, an RSC must be submitted three to four times before all deficiencies are addressed and the RSC can be filed to the Environmental Site Registry.

Ministry staff have shared their observations with PEO Director of Policy and Professional Affairs Bernard Ennis, P.Eng., and with Deputy Registrar, Regulatory Compliance Linda Latham, P.Eng.

As a first response, PEO has agreed to bring the matter to the attention of the wider engineering community, including an article in an upcoming issue of *Engineering Dimensions* by the ministry's technical staff about common errors in RSC submissions.

**Sheldon MacNeil is a divisional program specialist with the MOECC.**

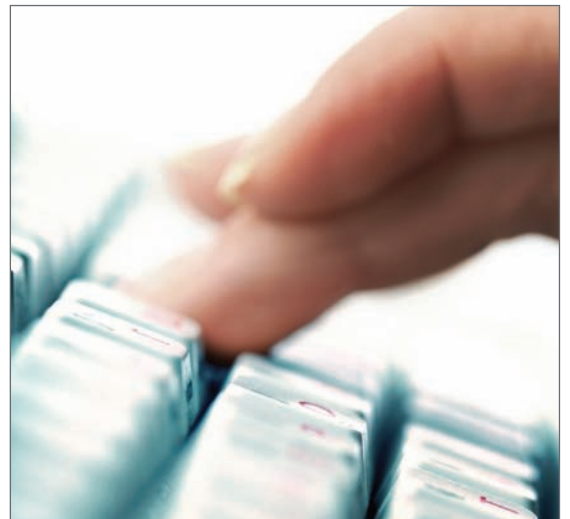
## New PEO management software SOON TO GO LIVE

By Nicole Axworthy

**THIS FALL**, PEO will be launching Aptify—licence holder management software that will allow PEO to address core regulatory and licence holder functions within one system. Aptify, also used by Alberta's engineering regulator, will replace LicenseEase, an application PEO has been using since 2001 (see "New membership database system taking shape," November/December 2013, p. 22). In the project's first phase, the goal is to replace current operations with Aptify as a like-for-like solution. Members who log into their online profile (under Pay Fees/Manage Account) at [www.peo.on.ca](http://www.peo.on.ca) will notice a different look and feel, but online services will remain the same.

The main benefit of the new software is that it will allow PEO greater flexibility to scale and grow by easily adapting to staff requirements to configure new process workflows or add new services. According to Alan Zimmermann, PEO's director of information technology, Aptify offers staff the ability to customize their own dashboard view, which will help them manage their activities and workload. Also, staff will be able to easily create their own targeted reports and statistics.

In 2015, after a settling period, the project will move to its second phase, involving using the new software to enhance PEO's licensing and regulatory processes.



# OCEPP a partner in new, \$2.5-MILLION RESEARCH PROJECT

By Catherine Shearer-Kudel



RESEARCH INTO A MAJOR, but little-studied, aspect of climate change will go ahead, thanks to a \$2.5-million grant from Canada's Social Sciences and Humanities Research Council.

The seven-year project is called *Adapting Canadian Work and Workplaces to Respond to Climate Change: Canada in International Perspective (ACW)*. It will examine changes in law, policy, work processes, business models, strategies and other areas that can help workplaces become greener—and which factors are obstacles.

Thirty-six people are involved from 17 organizations, including a number of Canadian universities, the Canadian Centre for Policy Alternatives, the government of Ontario, the Pembina Institute, Harvard University, the University of Westminster (UK), and PEO's Ontario Centre for Engineering and Public Policy (OCEPP).

"The impact of climate change on work is a big concern for engineers and policy-makers who struggle with uncertain policies that make engineering practice risky and difficult," notes OCEPP Director Bernard Ennis, P.Eng., PEO director, policy and professional affairs. "Engineers are obviously instrumental in making workplaces, work processes and work products greener. But they need the right tools in the form of regulations, standards and information to be effective."

Because work accounts for up to 80 per cent of greenhouse gas emissions in developed countries, employers and workers can take a leading role in helping reduce these emissions, says Carla Lipsig-Mummé, a York University professor and ACW's principal investigator. "Climate change is already changing how we work, how products are transported, what we produce and where we produce it. Greening work may not guarantee the future, but failing to do so will mortgage the future."

Goals of the project include creating work-based plans to lower energy use, incorporating best practices into Canadian work, and training the next generation of professionals to deal with climate change and its effects. ACW's first team meeting took place in Toronto in October. The project will conclude in 2021.

Since early 2010, OCEPP has participated in another climate change initiative, titled *Work in a Warming World (W3)*. Set to wrap up in late 2016, W3 has, to date, produced two books, dozens of research papers, an international conference and two workshops.



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# ONTARIO PROFESSIONAL ENGINEERS AWARDS adds engineering project award

By Nicole Axworthy



The Ontario Professional Engineers Awards (OPEA), a joint program of PEO and the Ontario Society of Professional Engineers, is adding another award to its extensive roster that honours the very best of Ontario's engineering community. The Engineering Project or Achievement Award has been created to recognize teams of engineers that have had

a significant and positive impact on society, industry and/or engineering. It will be presented first in 2015 (see OPEA call for nominations, p. 41).

"We look at the OPEA as a way of celebrating engineering and the diversity of engineering, and I think the engineering project or achievement award is an opportunity to focus on the team aspect that hasn't really been focused on before," says Nancy Hill, P.Eng., FEC, chair, PEO Awards Committee.

The award selection criteria, modeled after Engineers Canada's national engineering project or achievement award, focus on a project's impact on society and/or industry and/or engineering, ingenuity, project complexity, environmental impacts, and client expectations. Projects or achievements must also meet the following requirements:

- They must be conceived, designed and executed with significant input by Ontario engineers, or by a team of engineers, where at least 51 per cent are professional engineers registered in good standing with PEO;
- Nominators must demonstrate that the Ontario engineers played a significant role in the project or achievement. If the Ontario engineers were involved as part of a multi-professional team, they must have had a significant role in conceiving, designing and executing the project or achievement;
- Projects involving a team of engineers must have had a significant impact on society, and/or industry, and/or engineering;

- Projects or achievements must have been proved successful no more than one year prior to the nomination submission;
- Individual or joint nominations will be considered, provided the nomination has met all of the above criteria; and
- The owner of the project or achievement must sign a release agreement.

Hill says the award is meant to recognize a variety of innovative projects and inventions. "There were some driving principles but [the Awards Committee] wanted to make sure it wasn't just for big infrastructure-type projects—that's why it's project or *achievement*," she explains. "We wanted to make sure the criteria captured both infrastructure projects, which are very important to engineers and the province, but also other type projects."

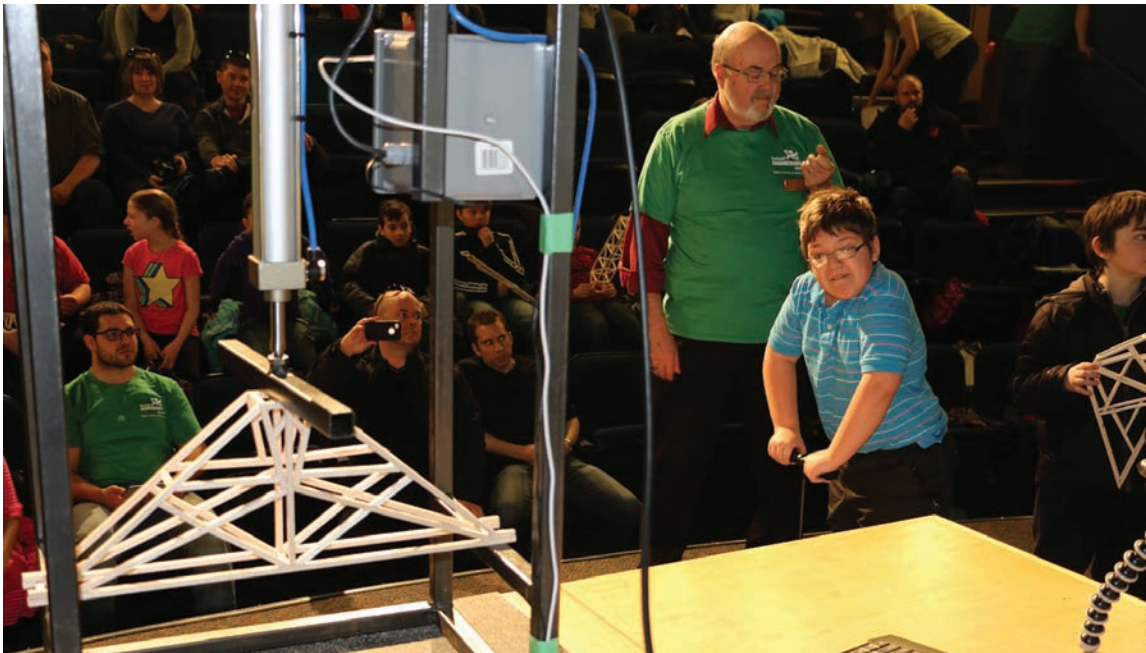
The peer-driven nominations of the OPEA program also honour individual professional engineers in Ontario who have made outstanding contributions to their profession and community. The Gold Medal, the OPEA's highest honour, recognizes commitment to public service, technical excellence and outstanding professional leadership. The Engineering Medal is presented in categories of engineering excellence, entrepreneurship, management, research and development, and young engineer. The Citizenship Award recognizes exceptional community service and contributions to society.

PEO also recognizes individuals through its own Order of Honour Service Awards, G. Gordon M. Sterling Engineering Intern Award, S.E. Wolfe Thesis Award, V.G. Smith Award, and the President's Award (for non-engineers). The PEO Awards Committee also nominates PEO licence holders and engineering interns for honours and awards given by external organizations for achievements as distinguished professional engineers or as outstanding citizens. One such honour is the Engineers Canada Fellowship (FEC), where Engineers Canada recognizes individuals for their years of service to the engineering profession.

To find more information or nominate a project, achievement or individual for an OPEA, visit [www.peo.on.ca/index.php/ci\\_id/2089/la\\_id/1.htm](http://www.peo.on.ca/index.php/ci_id/2089/la_id/1.htm).

# NEM 2015: Inspiring the engineers of tomorrow

By Erica Lee Garcia, P.Eng.



A student puts his bridge to the test at the 18th Annual Bridge Building Competition in Sudbury, a joint event presented by PEO's and OACETT's Sudbury chapters.

WHAT BETTER WAY to engage thousands of future engineers about the boundless possibilities of engineering than through a massive, province-wide event like National Engineering Month (NEM)? As always, Ontario NEM festivities take place throughout the month of March.

Last year, Engineers Without Borders (EWB), partnered with PEO and the Ontario Association of Certified Engineering Technicians and Technologists (OACETT), held 187 events across Ontario, reaching over 27,100 youth, students, professionals and members of the general public to build awareness and excitement about the power of this profession to shape a better, brighter future.

This year, several PEO chapters applied for and won funding from the Canada Foundation for Innovation to run new, ground-breaking events that it's hoped will create an even more positive perception of engineering in 2015.

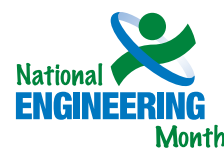
Through NEM events, professional engineers bring real-world experience, technical skills and the will to make a difference, to help the youth of today understand there is a place for them in our profession. If you would like to be part of NEM 2015, apply to run an event! PEO chapters receive up to \$700 each to organize NEM events. Collaborating with OACETT, EWB, the Ontario Society of Professional Engineers, the Engineering Student Societies' Council of Ontario, or other community organizations is not only possible it's highly encouraged!

The deadline to submit an application to receive NEM funding is November 15, 2014. To get an application or more information,

visit [nemontario.ca/professionals-portal/](http://nemontario.ca/professionals-portal/), contact your chapter or email me at [nem@peo.on.ca](mailto:nem@peo.on.ca).

I would also like to invite you to subscribe to our *Engineering Outreach* newsletter, which helps connect outreach enthusiasts from across the province. Sign up at [nemontario.ca/engineering-outreach-resources](http://nemontario.ca/engineering-outreach-resources).

More than just a successful outreach campaign, NEM is an inspiring experience, a chance to reflect on our chosen careers, and an opportunity to contribute to the world around us. We are eager to work with you to help shape the future of our profession!



## Engineers Canada launches NEW CAREER ACTION PROGRAM

*By Michael Mastromatteo*



**E**ngineers Canada has launched the first phase of its Career Action Program, designed to steer more young people toward an engineering career.

The first element, launched in October 2014, is the intention phase, in which students choose whether to pursue a career in engineering, identify specialty areas, and plan for application to a Canadian engineering school. Participants receive research tools, personalized counselling and networking opportunities.

Engineers Canada plans to expand the program to include engineers at all stages of their careers. Future elements of the program will be targeted at undergraduate students, recent graduates and mid-career engineers considering changes in professional direction.

Engineers Canada CEO Kim Allen, P.Eng., FEC, says the program will invigorate the engineering profession by helping prospective engineers in their formation. “To do this, we need to continually increase the talent pool of professional engineers by engaging and attracting young, technically adept students to consider engineering careers,” Allen says. “In particular, we need to encourage more students from groups that have been traditionally under-represented in the profession, especially young women and Aboriginal youth.”

The program’s second phase, to be launched in early 2015, will provide guidance to students already enrolled in accredited engineering programs, and match them with an ambassador/mentor.

The final phase, aimed at working engineers considering new career opportunities, is scheduled to come on stream in late 2015, and includes advice on transition to careers in government, consulting or related disciplines.

Engineers Canada hopes the 12 Canadian provincial/territorial engineering associations will help build awareness of the Career Action Program as it unfolds.

A fee for service initiative, the program’s career focus and consultation services will be offered at a discounted rate to members of Engineers Canada’s 12 constituent associations as part of its affinity programs. Details of the new affinity program will become available early in 2015.



## CEMENT ASSOCIATION seeking experiences of concrete designers

By Michael Mastromatteo

THE CEMENT ASSOCIATION OF CANADA (CAC) is calling on practitioners working in the concrete design industry to assist in updating its *Concrete Design Handbook*. CAC's handbook, described as an educational guide for concrete designers, comprehensively analyzes the Canadian Standards Association (CSA) A23.3 *Design of Concrete Structures Standard*, and includes explanatory notes and design examples to assist practitioners in carrying out their designs.

CAC's fourth edition of the handbook will bring it in line with the 2015 National Building Code of Canada and CSA's new A23.3-14 *Concrete Design Standard*. To gather feedback from users on their book format preference, specific needs and overall satisfaction with the handbook, CAC is conducting an anonymous, online survey this fall. The results of the survey will assist CAC in identifying areas for improvement for the next edition.

Hélène Dutrisac, P.Eng., codes and standards engineer for CAC, says the survey will remain open until November 28. It should take less than five minutes to complete.

To access the survey, visit [fluidsurveys.com/s/cdh/english/](http://fluidsurveys.com/s/cdh/english/) or the CAC's website at [www.cement.ca](http://www.cement.ca).



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Phil Sullivan, PhD, P.Eng. (centre), accepts a volunteer appreciation award for his many efforts with PEO's York Chapter. With him are fellow York Chapter volunteers Liz Daher, P.Eng., and Paymon Sani, P.Eng. Sullivan spoke at the chapter's September 27 licence certificate presentation ceremony about his role in the Apollo 13 mission.



## RESCUE MISSION TALK A HIGHLIGHT OF CHAPTER'S LICENCE PRESENTATION

*By Michael Mastromatteo*

**P**EO's York Chapter combined its fall certificate presentation for newly licensed engineers with a tribute to one of its members who played a role in the rescue of the Apollo 13 moon landing mission of April 1970.

Phil Sullivan, PhD, P.Eng., an active member of the chapter's Education Committee, spoke at the chapter's September 27 licence presentation ceremony. Fifty-four new engineers received their licence certificates at the event.

**"I went to bed that evening wondering if the astronauts were going to make it, but when I read the next morning that they had splashed down safely, I figured we must have got it right."** PHIL SULLIVAN, PHD, P.ENG.

In April 1970, Sullivan was a member of the University of Toronto's (U of T) Institute for Aerospace Studies (UTIAS). Midway through the Apollo 13 mission, the UTIAS team was called on by NASA engineers to help guide the damaged lunar capsule back to Earth after its aborted moon landing attempt.

The U of T group had to make special air pressure calculations to allow the safe separation of the lunar and command modules, which had been compromised during the mission by an oxygen tank explosion.

In his presentation, Sullivan outlined the steps the UTIAS team took to arrive at the right air pressure formula, quipping that he still has the slide rule on which he made some critical calculations.

"I went to bed that evening wondering if the astronauts were going to make it, but when I read the next morning that they had splashed down safely, I figured we must have got it right," he said.

Sullivan, along with six other York Chapter engineers, received certificates of appreciation from the chapter's Awards and Recognition Committee for their volunteer efforts. Through his work with the Education Committee, Sullivan often develops the engineering design challenge tests for students participating in local science and engineering competitions.

In addition to the licence and volunteer awards, the event included a presentation of scholarships to seven local engineering students.

Prior to Sullivan's address, PEO President-elect Thomas Chong, P.Eng., FEC, a member of the York Chapter, called on newly licensed engineers to remain engaged with the chapter and the regulator as they begin their professional careers.

York is one of PEO's most active chapters. Its 8000 members are offered an average of one professional or social activity each week.

## PEO HOSTS legislature interns



On September 22, PEO hosted the Ontario legislature interns as part of an annual sponsorship of the intern program. The interns learned what engineers do, why it is important for the public that they are regulated, and what PEO's role is. They had the opportunity to meet with management of PEO's Regulatory Compliance division, the Ontario Centre for Engineering and Public Policy (OCEPP) and the Government Liaison Program (GLP). They also met PEO's registrar and observed a registration hearing and administrative law in action. Over the next eight months, the interns will be matched with both a government MPP and an opposition MPP. It's hoped their visit will make PEO and the engineering profession more top-of-mind and approachable, and has informed them about current public safety issues, including repealing the industrial exception and

PEO's recommendations to the Elliot Lake Inquiry. Back row, left to right: Kaitlynn Dodge, account director, Brown & Cohen Communications & Public Affairs Inc.; Marisa Sterling, P.Eng., PEO enforcement manager; Gerard McDonald, P.Eng., PEO registrar; Christine Eamer; Jakub Sikora; Patrick Sackville; Kristen Neagle; Howard Brown, president, Brown & Cohen Communications & Public Affairs Inc.; Jeanette Chau, P.Eng., PEO manager, student and government liaison programs; Gonzalo Piñero, EIT, PEO student and government liaison program coordinator; and Catherine Shearer-Kudel, OCEPP program manager. Front row, left to right: Matthew Stanton, Emily Hewitt, Clare Devereux, Kristy May, Justin Khorana-Medeiros and Aaron Van Tassel.



**Professional Engineers**  
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### All-candidates meeting dates announced

All-candidates meetings in support of PEO's upcoming elections will be held on:

- Monday, January 12 – Eastern and Western regions
- Tuesday, January 13 – East Central and West Central regions
- Wednesday, January 14 – Northern Region and Councillor-at-large
- Thursday, January 15 – Vice president and President-elect

Videos of the all-candidates meetings will be available on PEO's website within two days of the meetings.

## West Toronto Chapter competition aims to attract women to the profession

*By William Hancharek, Brenda McCutcheon, and Georg Kralik, P.Eng., FEC*



Julianna Botros and Rachel Tam (not pictured) took first place in the WIES Design Competition August 9 for their innovative insoles designed to prevent falls by seniors.

Over the summer, PEO's West Toronto Chapter's Women in Engineering Committee teamed up with Toronto Rehabilitation Institute and the Ontario Brain Rehabilitation Institute to host the Women in Engineering and Science (WIES) Design Competition.

Culminating August 9, the competition was held over one month and challenged girls in grades 6 to 8 to design a device to prevent falls, or injuries from falls. The competition exposed young girls to a very real design challenge and real-life engineering design methodologies, and paired them with an engineer mentor.

Participants gathered for three workshops to work with their mentors to design new products, prototype them using Tinkercad 3D modeling software, and use a state-of-the-art falls lab. They also had the opportunity to learn more about engineering and science from their mentors. Participants presented their final designs at the Toronto Rehabilitation Institute.

West Toronto's Women in Engineering Committee believes this method of guided growth alongside an experienced engineer could be a way to increase female enrolment in all engineering disciplines, as it provides an accessible format to introduce young women to engineering concepts. More importantly, young women who may be interested in becoming engineers get a chance to meet real role models.

**William Hancharek and Brenda McCutcheon** were the WIES competition co-organizers. **Georg Kralik, P.Eng., FEC**, is vice chair, Women in Engineering Committee, West Toronto Chapter.

# Infrastructure investment becoming more complex: INFRASTRUCTURE SUMMIT

By Michael Mastromatteo

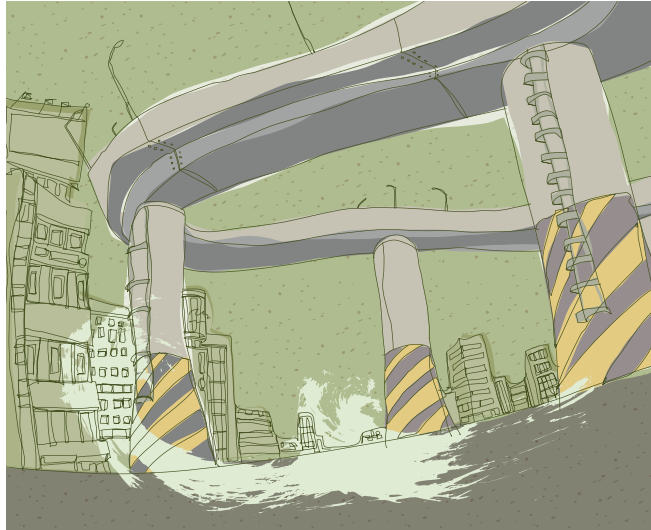
**POLICIES FOR DEALING** with Canada's much-talked-about infrastructure deficit are moving to a new level of sophistication and complexity—and not a moment too soon, say presenters at the annual infrastructure summit September 16 to 17 in Toronto (see “Complex infrastructure needs require new engineering approaches,” p. 32).

Organized each year since 2007 by the Toronto-based Strategy Institute, the summits present the latest thinking on infrastructure investment, renewal and rehabilitation.

At least five PEO members were among this year's presenters. They joined elected officials, administrators and project planners in discussing a range of civil infrastructure issues with special emphasis on transit, alternative funding models, innovation, sustainability and life-cycle analysis of infrastructure investment over the next half century.

Zoubir Lounis, PhD, P.Eng., senior research officer with the National Research Council's civil engineering/infrastructure section, opened the two-day conference with an overview of best practices for municipal officials to pay for, build and maintain the next generation of infrastructure projects.

“Sustainability and resilience criteria need to be considered at the design stage and at the long-term management stage of critical infrastructures,” Lounis said. To achieve sustainable and resilient infrastructure, he added, engineers and policy-makers should consider a program of innovative materials, regulations and comprehensive, risk-based design and management approaches. Lounis also said infrastructure systems now and in the future should be



marked by durability, low maintenance, high resistance and dependable functionality, especially in response to new and unforeseen disruptions.

Darla Campbell, P.Eng., executive director of the Ontario Coalition for Sustainable Infrastructure (OCSI) and a member of PEO's Government Liaison Committee (GLC), described the development of partnerships in addressing the infrastruc-

## WHO WILL YOU NOMINATE?

The Ontario Professional Engineers Awards recognize professional engineering excellence in innovation, leadership and entrepreneurship, and honour contributions to society as well. For 2015, an exciting new award category has been added to recognize a project or achievement by a team of professional engineers that has had a significant impact on society, industry or engineering.

OPEA eligibility requirements and nomination forms are available at [www.peo.on.ca](http://www.peo.on.ca).

The nomination deadline is Wednesday, February 25, 2015.

ture deficit. OCSI recently organized a Courageous Conservations conference that looked at why much municipal infrastructure has fallen into a state of neglect and disrepair.

“Engineers and others involved with infrastructure need to look to adaptation measures and to factor in a warming climate in all their decisions.”

DAVID PHILLIPS, SENIOR CLIMATOLOGIST, ENVIRONMENT CANADA

Campbell said the top reasons for this inactivity include poor appreciation for infrastructure’s contributions to healthy communities, weak political leadership and a lack of data on how to plan and build new projects.

She suggested it’s time for new thinking and information sharing among all stakeholders to arrive at better infrastructure investment decisions.

In his discussion of sustainable transit initiatives, Derrick Toigo, P.Eng., senior vice president, Infrastructure Ontario, emphasized alternative funding and procurement programs as one way to stimulate project development and completion. Infrastructure Ontario is a provincial Crown corporation promoting infrastructure project delivery, usually by way

of funding and procurement arrangements with the private sector.

A key take-away for engineers at the conference came from Environment Canada senior climatologist David Phillips, who outlined potential impacts of severe weather on infrastructure assets.

Phillips, who said he has seen more strange weather incidents in the last decade than at any other point in his 30-year career as a climatologist, said a warming climate is playing havoc with the understanding of weather patterns and the predictability of severe incidents.

“It suggests there is something else at play here, besides just nature,” Phillips said, adding that changing land use patterns over the last 30 years, along with rapid urbanization, have rendered traditional weather and climate data unreliable. “It’s almost as if we as a society are replacing nature’s infrastructure with our own,” Phillips said. “Engineers and others involved with infrastructure need to look to adaptation measures and to factor in a warming climate in all their decisions.”



## 2014 L.S. Lauchland Engineering Alumni Medal

The Faculty of Engineering at Western University is proud to honour **Bruce Washington Ross** with the 2014 L.S. Lauchland Engineering Alumni Medal for his contributions to business leadership, the community and the engineering profession.

An innovative and strategic leader in the business and technology sector, **Bruce Ross**, BESC’85 (Materials), is Group Head, Technology & Operations for the Royal Bank of Canada (RBC), and past president of IBM Canada.

[www.eng.uwo.ca](http://www.eng.uwo.ca)



# Volunteers needed for NRC construction code committee

By Jennifer Coombes



The National Research Council (NRC) is looking for volunteers to serve on its Canadian Commission on Building and Fire Codes (CCBFC), the committee that develops and maintains Canada's national construction codes. The CCBFC oversees the work of nine

standing committees that work on the national building, fire, plumbing and energy codes of Canada that, in turn, form the basis of provincial and territorial regulations.

The search is on for candidates that "represent all regions of Canada and all sectors of the construction industry that use, or benefit from, the national codes and provincial codes based on these models" and have broad knowledge on code-related and policy matters.

The appointments are for a five-year term. Those selected to join the CCBFC will begin their terms on September 1, 2015.

Potential volunteers are asked to use the online form on the Canadian Codes Centre section of the NRC website, [www.nrc-cnrc.gc.ca/eng/solutions/advisory/codes\\_centre/volunteer.html](http://www.nrc-cnrc.gc.ca/eng/solutions/advisory/codes_centre/volunteer.html), before February 18, 2015.

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THE ASSOCIATION HAS RECEIVED WITH REGRET NOTIFICATION OF THE DEATHS OF THE FOLLOWING MEMBERS (AS OF SEPTEMBER 2014).

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**ARCHIBALD, James Baxter**  
Nepean, ON

**AVILES, Alfredo Partoza**  
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**BACON, David Walter**  
Picton, ON

**BATEMAN, William Maxwell**  
Edmonton, AB

**BELL, Samuel James**  
East York, ON

**BLAIR, Desmond**  
East York, ON

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**BLAZIC, Joseph Robert**  
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**GLANC, Walter Zygmunt**  
Mississauga, ON

**GOMI, Takashi**  
Carp, ON

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**GRIFFITHS, Anthony James**  
Niagara-on-the-Lake, ON

**GYENGE, Mihaly**  
Ottawa, ON

**HENRIKSEN, Terje**  
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**HOTOVEC, Alexander**  
Nepean, ON

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## PEO'S LICENSURE ASSISTANCE PROGRAM REACHES FIVE-YEAR MILESTONE

*By Jennifer Coombes*

IN THE FIVE years since its inception in November 2009, PEO's chapter-based Licensure Assistance Program (LAP), formerly known simply as the Mentorship Program, has been providing support and guidance to engineering interns (EITs) pursuing licensure, particularly internationally trained engineering graduates.

The program matches mentors, known as guides, with EIT interns, and both sides of the pairing can expect to gain from the experience. EITs are exposed to an experienced P.Eng., who can provide advice, assistance and feedback while they are going through the licensing process. They may also gain professional skills and knowledge along the way. Engineer guides have the opportunity to improve their mentoring

skills while working with their assigned intern, and will gain satisfaction from helping a future member of the profession.

In 2010, the LAP pilot program was rolled out at five of PEO's chapters: Brampton, Mississauga, Oakville, Scarborough and York. In 2011, the second phase saw nine more chapters join. In 2013, all chapters were encouraged to join the program. From 2011 to April of this year, 432 guides and interns have been paired as they navigate the process of licensure.

One LAP success story is the York Chapter pairing last year of Suhair Matty, P.Eng., a project engineer with Telecon Design Inc., with her guide, Andy Wu, P.Eng., a senior account manager, real estate, TD Bank Financial Group. Matty, originally from Iraq, has been in Canada nine years and started the licensing process three years ago. Wu is originally from China and has been licensed with PEO since 2008.

Matty admits that, at first, she was skeptical about the value of the program, saying: "Honestly, I had doubts whether I would get anything from it but, on the other hand, ever since I registered with PEO I had a very good experience with them. So, I was willing to try it." She was soon paired with Wu. And, for Matty, it turned out to be the perfect moment to join, since at that time she was preparing her project for the Experience Requirements Committee interview.

"Andy helped me with presenting my project to the panel. That was very helpful because I have all of the technical skills but I did not have full confidence in how to present [my project] in a professional way. He helped me shape my presentation, and advised me on how to get to the point and to slow down, which really helped me with the panel," says Matty.

Wu adds: "We did a mock interview to see if I understood what she was presenting. I helped her with the structure and flow because it wasn't quite connecting when she presented it to me at first."



Last year, Suhair Matty, a newly licensed P.Eng., was paired with Andy Wu, P.Eng., as part of PEO's Licensure Assistance Program. The chapter-based program supports and guides engineering interns on their path to licensure.


According to him, their partnership was not restricted to the process of helping Matty become licensed. “It was much more. We would just talk about everything—career, family, whatever was on her mind. We both came in with the idea that we were going to learn from each other. That set the right tone from the start. Also, we each have our own culture that we come from. I’m a little more familiar with the western culture, so I was able to help her bridge some of the differences and explain why people were behaving in a certain way.”

Wu and Matty met every couple of months, four or five times in total, for a couple of hours each time. They both feel their time was spent productively, mostly because they took care to arrive prepared. For example, Matty emailed her presentation to Wu in advance of their meeting. “That way, I could come in ready with my recommendations, rather than just use the time to have her sit and watch me read,” says Wu.

Matty, who went on to receive her licence in July of this year, says she received much more from the program than she ever imagined. “When I met Andy, he didn’t just guide me through the licensing process, but also opened my eyes in a different way: What is the market for

engineers? What do I need to do to get more skills? He showed me the professional way.”

The experience even inspired her to give back to the program and become a guide herself, as soon as time permits. In fact, both plan on helping more up-and-coming engineers. Says Wu: “I know what it feels like coming to a different country and not knowing where to go for help. So one thing I always keep in the back of my mind is, if I can, I will try to help whoever needs my help. That’s what it comes down to.”

For more information about the Licensure Assistance Program, visit the program website, [www.peo.on.ca/index.php?ci\\_id=2010&la\\_id=1](http://www.peo.on.ca/index.php?ci_id=2010&la_id=1). 

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# CHANGING HOW FUNDING FLOWS TO MUNICIPALITIES MAY LEAD TO EFFICIENT, SUSTAINABLE WATER INFRASTRUCTURE

By Kerry Freek



ONTARIO CENTRE  
FOR ENGINEERING  
AND PUBLIC POLICY

LIKE MANY jurisdictions, Ontario is working to ensure the financial and environmental sustainability of municipal water, wastewater and storm water systems. While doing more with less is the reality for most utilities, one of the big-

gest challenges for water and wastewater utilities is raising additional funds to resolve growing infrastructure deficits.

As executive director of the University of Waterloo's Centre for Advancement of Trenchless Technologies, Mark Knight advocates for cost-effective solutions that extend or renew the life of existing buried assets rather than big capital projects that require hauling and replacing old infrastructure, often before the end of its useful life.

The challenge, he says, is where to find the money. "Eighty per cent of the cost of running a water or wastewater network is operational. If we spend money to optimize capital works, we can substantially reduce that cost. But in most municipalities, there's a political lack of will to raise rates."

Despite direct investment in infrastructure through such programs as Building Together, government funds are not covering growing requirements, either. Municipalities continue to struggle with tight budgets and competing priorities.

Brenda Lucas, of Southern Ontario Water Consortium, agrees that new mechanisms are required to close the funding gap. Like Knight, she wants to see cost-effective, innovative solutions at work. Implementing innovation, however, requires municipalities, not to mention the consultants leading their projects, to take some risks. Since Walkerton, strict regulations have improved public confidence in Ontario's water systems, bolstering an environment of innovation that includes more than 300 technology companies and a support network of research institutes and organizations. The problem? The



perceived risks involved with trying something new—or non-traditional—frequently outweigh the reward.

### CHANGING THE FLOW OF FUNDS

How can we "de-risk" adoption so municipalities can reap the rewards of innovation? WaterTAP's Invest to Save working group believes we have to start with the way infrastructure funds flow to municipalities.

As chair of the group, Lucas leads a collection of industry experts who are particularly interested in alternative ways to finance infrastructure improvements through investments in optimization and efficiency. She believes public dollars should be directed to approaches that are cost-effective and have multiple benefits. "A dollar invested in a different way could save municipalities from spending several times that amount on traditional capital infrastructure," she says. "We want to help open the door to funding non-capital approaches or capital approaches that offset traditional requirements."

After forming in 2013, the Invest to Save group began collecting case studies from Ontario to demonstrate the savings associated with innovation, whether it's the use of new technologies or simply a different approach to a problem. "The opportunities are endless," Knight says. "On the wastewater side, pipes are leaking into groundwater tables

and causing issues with infiltration and inflow, sometimes contributing up to 30 or 40 per cent of the flow to plants. We're paying to treat that water! In some cases, we're spending millions building bigger plants when we could actually just work to reduce those flows." For example, he says municipalities could invest in fixing and relining pipelines and gain tremendous capacity.

Programs such as Ontario's Showcasing Water Innovation are a great source of these cases, and working group members have contributed stories from their own experience as well as gathering them from peers. From small towns to large cities, there are plenty of examples to share.

### Perth, Ontario

When Ministry of Environment guidelines required the town's water treatment plant to treat its filtration residues before discharging into the Tay River, Perth (population 5840) was looking at a price tag of \$2 to \$3 million for the conventional solution. Instead, the town invested \$800,000 to construct a Geotube facility to help manage plant residue, saving 60 to 70 per cent of the possible cost. Additionally, the town preserved tax revenues by preventing the loss of lagoon capacity for 80 new homes.

### North Grenville, Ontario

The slightly larger town of North Grenville has a master servicing plan that required an additional costly activated sludge wastewater treatment plant capable of dealing with more stringent effluent requirements, particularly for phosphorus. The conventional solution, estimated to cost \$9 to \$11 million, would include a tertiary treatment train for phosphorus. Instead, the town implemented a phosphorus trading program, funding inexpensive reduction infrastructure at the pollution source to reduce removal requirements at the plant, and conducted a staged upgrade of the existing plant. For every dollar invested in that program, it's like saving \$8 to \$21.

### Guelph, Ontario

The rated capacity of the city's wastewater treatment plant was too low to accommodate projected future growth, but an expanded facility would result in more stringent effluent requirements due to increased flow into the Speed River. Expansion and addressing effluent would cost up to \$13 million, including anaerobic digestion and ultraviolet disinfection, but Guelph decided to take a different route.

The city implemented an optimization program for infrastructure and processes to re-rate the treatment plant, thereby deferring the need for expansion. A focus on "human infrastructure" resulted in investment in staff training and skills development, enabling staff to improve process control, including reduction of ammonia and chlorine residuals in the effluent, which eliminated the need for costs associated with ultraviolet disinfection.

**A DOLLAR INVESTED IN A DIFFERENT WAY COULD SAVE MUNICIPALITIES FROM SPENDING SEVERAL TIMES THAT AMOUNT ON TRADITIONAL CAPITAL INFRASTRUCTURE.**

### REGULATORY SHIFTS

The Invest to Save concept encourages municipalities to explore innovative solutions before seeking provincial funding. But there's more to the approach, and it involves a shift in the way we think about regulation and procurement.

"Performance-based regulation, rather than prescriptive regulation, means we can get the same outcomes using different technologies," says Lesley Herstein, a University of Toronto PhD student who has been working with the Invest to Save group. "To get to this point, we ultimately need a shift in procurement practices to qualifications-based selection versus price-based selection."

In other words, municipalities and consultants need more latitude to produce the required results. They need to have the opportunity to "do more with less" with a little more creativity.

To enable non-traditional approaches, there needs to be a shift in the way infrastructure programs are built and delivered, according to Lucas. "Currently, there is no mechanism in infrastructure funding programs that provides incentives or funding for implementing these types of approaches. It's also difficult to account for the return on investment in approaches that offset traditional requirements, such as green infrastructure, even though we know it provides real value," says Lucas.

In addition to gathering case studies, the group is assembling a set of recommendations and consulting with peers, as well as the regulatory bodies. It's clear that municipalities are starting to think long term. Whether they're spending government or municipal funds, they must look for the most efficient ways to meet performance targets. continued on p. 30

## [ POLICY ENGAGEMENT ]

continued from p. 29

### POLICY SIGNALS

Encouraging signals indicate that provincial policy and the Invest to Save approach may converge. To qualify for infrastructure funding, municipalities must now demonstrate a commitment to long-term asset management with a plan. Building Together, announced in June 2011, promised it would encourage municipalities to explore new Ontario water and wastewater technologies (Ministry of Economic Development, Employment & Infrastructure).

Most recently, the Ontario Liberal party's 2014 election platform promised a focus on investing in solutions that would "minimize the need for costly infrastructure and its ongoing maintenance and operation, including innovative water technology solutions and/or approaches that will ultimately save money for municipal, provincial and federal governments" (Ontario Liberal Plan).

If the language is any indication, Ontario is moving toward investment that supports innovation—and its municipalities have a great opportunity to benefit from it.  $\Sigma$

**Kerry Freek is WaterTAP's manager of marketing and communications. Prior to joining WaterTAP, she was the editor of *Water Canada*. Her first book, *Flood Forecast: Climate Risk and Resiliency in Canada*, was published in May 2014.**

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## The 2015 PEO Council Elections are coming up!

Once again, voting in PEO's council elections will be **by telephone and Internet only**.

A list of candidates, their statements and detailed electronic voting instructions will be mailed to all professional engineers **no later than January 23, 2015**.

**You'll have until 4:00 p.m. ET on February 27, 2015 to vote.**

Candidates' statements will also appear in the January/February 2015 issue of *Engineering Dimensions*, and on PEO's website. **See page 51** for the Call for Candidates and approved voting and publicity procedures.



## ONTARIO ENGINEERS RECEIVE TOP AWARDS

By Nicole Axworthy



Shiping Zhu, P.Eng., has been named a fellow of the Royal Society of Canada.

Shiping Zhu, P.Eng., chemical engineering professor, McMaster University, has been named a fellow of the Royal Society of Canada, the country's highest academic honour. A world leader in polymer reaction engineering, Zhu's contributions range from developing new plastics to better approaches for preventing rejection of implanted plastic materials. The Royal Society of Canada was founded in 1882 and comprises the academies of arts, humanities and sciences of Canada. Its mission is to recognize scholarly research and artistic excellence.

Anne Sado, P.Eng., president, George Brown College, and Annette Bergeron, P.Eng., FEC, principal, Bergeron Consulting, and PEO past president, are two of the 2014 Top 25 Women of Influence presented by Women of Influence Inc., a leading organization dedicated to the advancement of women in North America. Sado is honoured in the public sector category, Bergeron in the professional services category. To celebrate their achievements, Sado and Bergeron will be profiled in the winter issue of *Women of Influence* magazine and honoured at a luncheon headlined by Ontario Premier Kathleen Wynne. The Top 25 ranking showcases the achievements of senior executives who have made a significant difference and are leaders in their fields: "These women serve as important role models for future female leaders across Canada," says the press release. Now in its fourth year, the Top 25 Women of Influence selects recipients based on accomplishments and the magnitude of their influence over the past year, including number of employees, awards, board memberships, funds raised, business deals initiated and/or led, and published work.



Anne Sado, P.Eng., and Annette Bergeron, P.Eng., FEC, are two of the 2014 Top 25 Women of Influence.

Robert Rehder, P.Eng., has been named to Peterborough, Ontario's Pathway of Fame in the category of community betterment. The Otonabee Region Conservation Authority says: "Rehder's vision, leadership qualities, community pride, skills and passion have provided opportunities for youth education in forest ecosystem management, for volunteer involvement in conservation, the restoration of the historic Hope Mill and more." Rehder had a 47-year career with General Electric Canada and in retirement is



Robert Rehder, P.Eng., has been named to Peterborough's Pathway of Fame.

still a consultant on high-voltage switch gear and insulation systems. He received the Ontario Professional Engineers Citizenship Award in 2008. Since 1998, more than 200 people have been inducted to Peterborough's Pathway of Fame. Σ

# Complex infrastructure needs require new





The need for infrastructure renewal has long been known and potential solutions that seek to do more with fewer resources, while accounting for severe weather events over the long term, are debated daily in the public policy realm. How is engineering practice adapting to this new imperative?

# engineering approaches

*By Michael Mastromatteo*



**D**on't look now, but the crumbling state of Ontario's aging and overstretched infrastructure, combined with taxpayers' calls for greater value for public money spent, are requiring engineers and others involved in making infrastructure decisions to devise more effective, efficient and sustainable ways of fixing the province's roads, bridges, structures, transit systems and water treatment facilities.

Adding to the complexity of finding appropriate solutions are concerns about extreme weather incidents and climate change, which, as Engineers Canada's Public Infrastructure Engineering Vulnerability Committee has noted, are nullifying much of the existing data on nature's impact on built infrastructure.

In 2012, four organizations, including the Canadian Society for Civil Engineering (CSCE), released the first-ever Canadian Infrastructure Report Card. It reported that while not all the infrastructure news is dire, there are some daunting challenges ahead for decision makers and those supporting them.

The initial infrastructure report card confined itself to municipal drinking water, wastewater, storm water and road systems. It found that nearly 10 per cent of these systems are in poor or very poor condition, while another 23 per cent are in only fair condition. The report card pegged the overall value of Canada's municipal infrastructure at approximately \$538 billion.

One of the key recommendations of the report card's authors is that cities across Canada must adopt new and innovative ways to assess, manage and build municipal infrastructure.

The civil engineering society strongly recommends developing new systems and techniques to promote better decision making related to the planning, design, construction, operation and funding of municipal infrastructure across the country.

For Ghani Razaqpur, PhD, P.Eng., professor of civil engineering at McMaster University and head of its infrastructure research group, the decision making around infrastructure investment cries out for greater engineering involvement.

"We need participation from the broad engineering community," Razaqpur told *Engineering Dimensions* in an interview. "We need designers, researchers, construction and materials experts, and we need engineers who work at the cutting edge of infrastructure research and development to be part of the problem-solving team."

He says other professional disciplines and forms of expertise will always be a part of infrastructure rehabilitation solutions, but that their input will remain secondary to the technical and scientific contributions of engineers.

### PURVIEW OF ENGINEERING

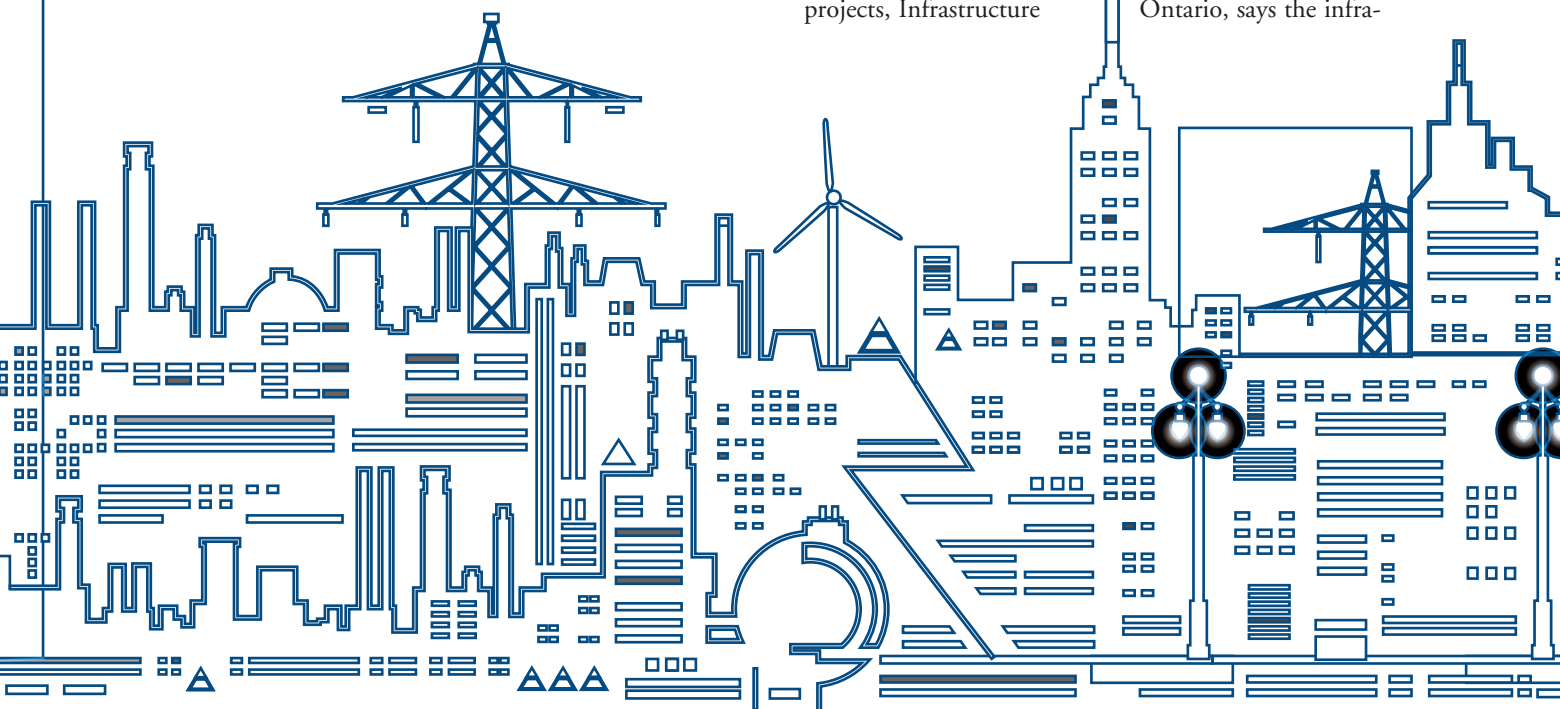
"The actual design and implementation to make [public infrastructure] durable and sustainable falls squarely within the purview of engineering," Razaqpur adds. "Regrettably, today the debate is led by non-engineers, and the engineer often plays a secondary role with regard to planning and decision making."

One response to engineering/infrastructure challenges is seen at the University of Toronto, which recently instituted a master's program in cities engineering and management in its faculty of applied science and engineering. Initiated in 2013, the program looks to turn out engineering graduates with a deeper understanding of the complex, cross-disciplinary issues facing cities throughout the world.

"Engineers have long been concerned with designing and managing components of cities, but now, enabled by information technology, we are able to look at cities in a more integrated fashion," says Chris Kennedy, PhD, P.Eng., former director of the program. "There's also an emergence of analytical technique and models that begin to transcend the grey space between engineering and urban planning."

Other professional engineers heavily involved in infrastructure agree that new thinking and approaches are clearly in order.

Derrick Toigo, P.Eng., senior vice president, major projects, Infrastructure Ontario, says the infra-



structure deficit has forced government decision makers and engineers to be alert to different approaches to the funding, delivery and maintenance of new projects.

Infrastructure Ontario is a provincial government body created in 2005 to stimulate infrastructure construction projects, primarily by looking for new procurement and funding models. It teams up with public sector agencies, municipalities and other organizations to procure and deliver large-scale infrastructure projects. The agency is an early exemplar of the public-private partnership (P3) system that many hold out as a logical combination of resources to confront and overcome the infrastructure deficit in Ontario.

Infrastructure Ontario relies heavily on engineering input because of the requirement for significant due diligence and risk analysis before any project gets underway.

Engineering due diligence is done mainly in such areas as geotechnical, hydrogeological and hazardous materials testing. These are areas of risk, Toigo says, that must be addressed prior to issuing a request for proposal.

“We also assess, through written reports and visual inspections, the structures affected by our projects. Our project teams have many individuals who are professional engineers, but we work with the broader engineering community that has expertise in these fields to assist us in the due diligence.”

Toigo was one of half a dozen engineers presenting at the September 16 to 17 Future of Canada’s Infrastructure Summit in Toronto (see p. 21). He says engineers are key in the design of infrastructure, but also need to be familiar with all-encompassing approaches to the planning, development, operation and maintenance of infrastructure assets.

“Infrastructure Ontario has many diverse team members, but I would say the cornerstone to many of our teams are the engineers who work with us,” Toigo says. “The engineers working at Infrastructure Ontario have a mindset for following processes, but also for creative problem solving. The ability to recognize risk and determine the probability and impact of the risk occurring is important to identifying where there may be potential pressures on project budgets and schedules.”

## BETTER DECISION MAKING

Arnold Yuan, PhD, P.Eng., director of Ryerson University’s Institute for Infrastructure Innovation, says engineering can also contribute to the development of better decision-making tools for the entire infrastructure industry.

Yuan is part of a research cluster promoting a risk-informed, life cycle-based dimension to infrastructure planning and decision making. He calls it a systems approach to infrastructure development, aimed at improving the information available to engineers and decision makers. “It’s a key way of bringing all the factors and constraints together and avoiding the ‘silo’ approach to decision making that occurred in the past,” Yuan says.

Indeed, speakers at the Future of Canada’s Infrastructure Summit identified this silo approach of separate departments and agencies within municipal government all struggling with different aspects of infrastructure renewal as a major obstacle to making progress.

One of the most basic of solutions, as presented to the summit by Darla Campbell, P.Eng., chief executive, Ontario Coalition for Sustainable Infrastructure, is for all stakeholders to share information readily and strive for consistent approaches to common problems.

Another approach to infrastructure renewal and investment that’s gaining prominence is the concept of asset management. The CSCE’s infrastructure report card empha-



sizes the need for municipalities to have an asset-management system in place to increase the longevity of its assets by optimizing investments in maintenance and rehabilitation.

A mature, infrastructure asset-management system should provide repeatable and “auditable” evaluation of infrastructure condition and investment needs. CSCE says this would enable infrastructure owners to establish asset-management plans that consider rates of deterioration and community-service levels.

The Canadian Network of Asset Managers (CNAM) is an organization promoting asset management programs as a key ingredient in municipal infrastructure investment and rehabilitation. An association of municipal employees, consulting engineering firms and other stakeholders, CNAM provides a forum for city governments to exchange information related to municipal infrastructure asset management from both operational and strategic perspectives.

Alain Gonthier, P.Eng., Ottawa’s manager, asset management, business and technical service, is the past chair of CNAM. “Asset management is the coordinated activities of an organization to maximize the usage and value of its physical assets,” he says, adding that service and users, rather than the physical assets themselves, are the key focus for infrastructure asset managers. “Infrastructure assets only exist to support the delivery of services to the community. If there were not a service to be provided, there would not be a need for the asset,” Gonthier says.

“It’s no longer a question of how to design bridges, structures, roads and different pieces of infrastructure,” he adds, “it’s understanding how these assets will be managed over their service life. Many of these assets have very long, in some cases, decades-long lifespans. Understanding the true cost over the asset life goes well beyond the initial construction cost.”

Gonthier notes that an asset-management system helps establish priorities when it comes to the allocation of funding and resources.

“If we had unlimited dollars, we could look at [assets] in isolation, but because we don’t have unlimited dollars, we have a lot of funding challenges,” he says. “There are a lot of needs and expectations, and linking these back to service levels challenges us in terms of what are the best decisions to help support the services we are delivering.”

Gonthier says engineers involved in infrastructure asset management will have to learn to engage more directly with other disciplines in developing an innovative approach to managing infrastructure assets.

“Historically, we didn’t talk much about asset management,” he says. “If you go back 15 years, you would probably be hard pressed to find any references to infrastructure asset management. That term has really evolved over the last decade because of the realization that it’s not just about building new infrastructure. Now, not only is there pressure to build new infrastructure, but there is also a need to invest in infrastructure that already exists.”

## ENGINEERING INFLUENCING ORGANIZATIONAL DECISIONS

Gonthier notes that engineers involved in infrastructure asset management are “taking engineering from a pure applied science and expanding that to influence decisions made at the organizational level—one where we are setting out plans and directions for strategic investments.”

Indeed, the debate about infrastructure investment and renewal involves complex decision making against a dizzying array of new constraints—increasing urbanization, limited financial resources, and severe weather patterns being chief among them. It is not only about what, when and how to build, but also sometimes about when to knock down and start over.

In addition, engineers involved with infrastructure must be constantly focused on the future. Says Razaqpur: “What is needed foremost is to have a rigorous and detailed plan, at least for the next 25 years, to have an inventory of what we have, what we need to build, how much we need to maintain the existing facilities and what it will cost to build and maintain new facilities. We also have to ask who will pay for all this, and what technical and engineering know-how we need to ensure we get the best return on our investment.”

“To me, it’s about rediscovering our cities,” says Kennedy. “Look at the construction in downtown Toronto, or downtown Kitchener, for that matter. Infrastructure is being recognized as a key ingredient for making them healthier and more vibrant. It’s a different type of infrastructure, though, from the last century, with more emphasis on ‘quality of place.’”

CSCE and its partner organizations are scheduled to release the second Canadian Infrastructure Report Card in September 2015. The report card will give an update on the state of the selected infrastructure, which may indicate how well engineering is adapting to the complex decision making needed for infrastructure that builds better communities.  $\Sigma$

### Guidelines for infrastructure engineering

To assist professional engineers involved in the design and management of public infrastructure, PEO publishes the following professional practice guidelines:

- Acting Under the *Drainage Act*
- Engineering Evaluation Reports for Drinking Water Systems
- Engineering Services to Municipalities
- Land Development/Redevelopment Engineering Services
- Roads, Bridges and Associated Facilities
- Solid Waste Management
- Transportation and Traffic Engineering

The guidelines are available from PEO’s website at:  
[www.peo.on.ca/index.php?ci\\_id=4377&la\\_id=1](http://www.peo.on.ca/index.php?ci_id=4377&la_id=1)



## SUMMARY OF DECISION AND REASONS

In the matter of a hearing under the *Professional Engineers Act* and in the matter of a complaint regarding the conduct of HECTOR R. VALDEZ, P.ENG., a member of the Association of Professional Engineers of Ontario and VALDEZ ENGINEERING LTD., a holder of a Certificate of Authorization.

This matter came for a hearing before a panel of the Discipline Committee on November 8 and 9, 2012, at the Association of Professional Engineers of Ontario (association) in Toronto. The matter stemmed from a complaint against the actions of an engineer who is a member of the association and those of an engineering company holding a Certificate of Authorization.

### CIRCUMSTANCES INITIATING COMPLAINT

A sand storage silo was relocated from an automotive plant in Ohio to an aluminum casting plant in Windsor, Ontario. The capacity of the silo needed to be increased by 25 per cent. The casting plant hired a local equipment installation company to reassemble the silo and expand its capacity. The installation company retained was Valdez Engineering Limited (VEL), a holder of a Certificate of Authorization, to design the construction and insertion of a 4-foot-high ring section into the silo to increase its holding capabilities from 200 tons to 250 tons. When the modifications were made on the silo, it leaked when filled with sand. The leakage led the president of the installation company to lay a formal complaint against Hector R. Valdez, P.Eng. (Valdez or the member), and VEL (the holder).

### THE ALLEGATIONS

The association presented allegations against the member and the holder as follows:

That Valdez and Valdez Engineering Ltd. are guilty of professional misconduct as follows:

1. Failing to sign and seal drawings as required by section 53 of Regulation 941 of the *Professional Engineers Act*, amounting to professional misconduct as defined by section 72(2)(g) of Regulation 941.
2. Creating drawings, which were insufficiently detailed or clear, that inaccurately reflected the as-built condition of the project, or that otherwise failed to maintain the standards of a reasonable and prudent practitioner,

amounting to professional misconduct as defined by sections 72(2)(a) and (b) of Regulation 941.

3. Creating a drawing that specified modifications that did not comply with a CSA standard, amounting to professional misconduct as defined by section 72(2)(d) of Regulation 941.
4. Behaving in a manner toward other professionals engaged in a project that would be reasonably regarded by the engineering profession as disgraceful, dishonourable or unprofessional, amounting to misconduct as defined by sections 72(2)(j) of Regulation 941 and amounting to a breach of section 77(6) of the Code of Ethics.

### HEARING

A hearing was held to consider the matter on November 8 and 9, 2012. Neither the member and the holder nor their representatives were present at the hearing. The association provided evidence that the member and the holder had been advised of the hearing by registered mail in sufficient time. The member and the holder at no time provided any reason for not appearing. As the member and the holder were not in attendance and did not furnish a response to the allegations, the panel took the view that the member would plead not guilty to all the allegations and the association would have to substantiate the allegations with provable facts.

The association presented three witnesses: the complainant and two expert witnesses, Albert Schepers, P.Eng., and Ted Chapman, P.Eng.

### DECISION

After receiving and reviewing the evidence and hearing the testimony of the witnesses, the panel ruled that the member and the holder are guilty of allegations 1 and 2 and not guilty of allegations 3 and 4.

## REASONS

### Allegation #1

Section 53 of Regulation 941 requires every holder who provides service to the public to sign, date and affix the holder's seal to every final drawing prepared and checked by the holder before it is issued.

The member and the holder prepared and issued an original drawing and two revisions. At no time was any version of this drawing signed and sealed by the member. By not complying with section 53, the member and the holder are guilty of professional misconduct under section 72(2)(g) of Regulation 941.

### Allegation #2

The member and the holder produced three drawings that lacked details for bolted and welded connections and for the safe construction of the works. Being negligent and failing to make reasonable provision for the safeguarding of life, health and the property of a person who might be affected by the work for which he was responsible, the member and the holder are guilty of professional misconduct as defined by sections 72(2)(a) and (b) of Regulation 941.

### Allegation #3

Section 72(2)(d) of Regulation 941 states that professional misconduct is the "failure to make responsible provision for complying with applicable statutes, regulations, standards, codes, bylaws and rules in connection with work being undertaken by or under the responsibility of the practitioner." The association was unable to show through clear, convincing evidence that the member and the holder failed to comply with applicable statutes, regulations, standards, codes, bylaws and rules.

### Allegation #4

The allegation contains the words "behaving in a manner towards other professionals engaged in a project." The association did not present evidence the member behaved unprofessionally towards other professionals on the project. Had it been proved that the member had behaved unprofessionally towards individuals named in evidence he still would not be guilty, based on the exact wording of the allegation. No evidence

was presented to show that others named in the matter have a professional designation. The member and the holder are not guilty of behaving towards other professionals in a manner that would be reasonably regarded by the engineering profession as disgraceful, dishonourable or unprofessional.

## PENALTY SUBMISSIONS

The panel requested the submissions on penalties be in writing.

The association submitted as follows:

- (a) Valdez and VEL shall be reprimanded in writing, and the fact of the reprimand shall be recorded on the register for two years;
- (b) Valdez shall write and pass the professional practice examination (PPE) within 14 months of the date of the penalty decision;
- (c) Valdez or VEL shall pay \$10,000 in costs to PEO within three months of the date of the penalty decision;
- (d) If Valdez fails to write and pass the PPE within the time limit set out above, his licence and the Certificate of Authorization of VEL shall be suspended until such time as he does so;
- (e) If the costs ordered paid to PEO are not paid within the time limit set out above, Valdez's licence and the Certificate of Authorization of VEL shall be suspended until the costs are paid;
- (f) The licence of Valdez and Certificate of Authorization of VEL shall be revoked if:
  - (i) Valdez fails to write and pass the PPE; or
  - (ii) the costs ordered paid to the PEO are not paid within 24 months from the date of the penalty decision; and
- (g) a summary of the Decision and Reasons of the Discipline Committee shall be published, with reference to names.

The member and the holder responded to the request for a penalty submission with three letters. None of the letters addressed the issue of penalty but implied there was additional information pertaining to the matter to be considered by the panel. The panel sought advice from the independent legal counsel (ILC) as to how to react to statements presented by the member and the holder. Based on the advice from the ILC and the association's response to the advice, the panel decided the letters would not alter its decision, particularly as the member and the holder avoided the hearing process without reason.

## PENALTY DECISION

The panel had only before it the submission from the association and none from the member and the holder in assessing penalties. The panel balanced the submission against the proven allegations and decided as follows:

- (a) The member and the holder shall be reprimanded in writing, and the fact of the reprimand shall be recorded on the register for two years pursuant to the *Professional Engineers Act*, s. 28(4)(f);
- (b) Revoke the licence of the member and the holder pursuant to the *Professional Engineers Act*, s. 28(4)(a);
- (c) Postpone the revocation of the licence of the member and the holder for a twelve-(12)-month period commencing on the date that this Decision and Reasons is issued to allow the member and the holder to improve their drawings to an expected professional engineering standard and to demonstrate this improvement through the inspection of the member's and the holder's drawings pursuant to the *Professional Engineers Act*, s. 28(4)(k);
- (d) The member and the holder shall provide to the registrar monthly, for the 12-month penalty postponement period stated in (c), a list of projects and drawings completed during each month pursuant to the *Professional Engineers Act*, s. 28(4)(e)(iv). The list shall be submitted within ten (10) days of the end of each month;
- (e) The member and the holder shall accept and pay for the cost of an inspection of the drawings selected from the monthly lists provided by the member and the holder under item (d) pursuant to the *Professional Engineers Act*, s. 28(4)(e)(iii). The responsibility of performing the inspections shall be delegated through the registrar to an engineer to be selected by the registrar. The engineer shall have structural steel and assembly expertise and be knowledgeable and experienced in the area of practice of the member and the holder and shall be acceptable to the member and the holder. For each month of the first three months that drawings are produced in the penalty postponement period, the engineer shall select the drawings from one representative project for technical review to determine if they meet a commonly expected professional engineering standard. After three sets of drawings have been reviewed, the engineer shall select one set of representative drawings every three (3) months, from those produced during the three months, until the end of the 12-month penalty period. The engineer shall advise the member and the holder of the review results after each review. If minor errors are found or minor improvements are considered necessary to be made to the drawings, the engineer shall so inform the member and the holder. The engineer shall notify the registrar within three (3) days of completing an inspection if there are, in the engineer's opinion, major failings in the drawings or if the member and the holder fail to make revisions to eliminate minor errors of which they have been advised. At the end of the penalty suspension period, the engineer shall submit a report on the review findings to the registrar. The engineer in the report shall provide an opinion as to whether or not the member and the holder are producing drawings that meet a commonly expected professional engineering standard;
- (f) Suspend the revocation of the licence of the member and the holder if, at the end of the 12-month period of the penalty postponement, the inspecting engineer reports that the member's and the holder's drawings meet a commonly expected professional engineering standard pursuant to the *Professional Engineers Act*, s. 28(4)(k);
- (g) For the 12-month period following the suspension of the revocation of the licence when the terms of item (f) above are met, a restriction shall be placed upon the licence and Certificate of Authorization of the member and the holder such that the member and holder shall submit to the registrar a list of projects and drawings completed during each month pursuant to the *Professional Engineers Act*, s. 28(4)(e)(iv). The list shall be submitted within 10 days of the end of each month;
- (h) The member and the holder are not to be subjected to costs; and
- (i) A summary of the Decision and Reasons of the Discipline Committee shall be published in summary form with names pursuant to s. 28(4)(i) of the *Professional Engineers Act*.

## REASONS FOR PENALTY DECISION

In determining the penalty the panel considered the following:

- (a) protection of the public;
- (b) maintenance of professional standards;
- (c) maintenance of public confidence in the ability of the profession to regulate itself;
- (d) general deterrence; and
- (e) specific deterrence.

These considerations are applied as follows:

- (a) Reprimanding the member and the holder in writing and maintaining the reprimand on the register for two years protects the public and provides a deterrent;
- (b) The association requested that the member and the holder write and pass the professional practice examination (PPE) within 14 months of the date of the penalty decision. The panel believes that since the member and the holder prepared drawings lacking sufficient and clear information, it would be more appropriate to have their drawings reviewed and to receive instruction on the proper preparation of drawings with sufficient and clear details to enable the work to proceed and be completed in a safe and satisfactory manner. Studying for the PPE would not provide knowledge on the mechanics of preparing drawings nor would passing the exam provide proof that the member and the holder can produce satisfactory drawings;
- (c) The association requested that the member and the holder pay \$10,000 in costs to the association within three months of the date of the penalty decision. The panel decided the association did not provide justification for assessing costs against the member and the holder. The member and the holder will have to bear the cost of having their drawings reviewed;
- (d) During the 12-month postponement period of the revocation of the member's and the holder's licence, the public will be protected and public confidence will be maintained in the ability of the profession to regulate itself as their drawings will be under review;
- (e) During the 12-month period following the suspension of the revocation of the member's and the holder's licence, the public will be further protected by the restriction on the licence and Certificate of Authorization of the member and the holder, requiring the monitoring of their projects and drawings;

- (f) Revoking the licence and the Certificate of Authorization of the member and the holder if he fails to demonstrate the production of drawings expected of a professional engineer will maintain public confidence in the ability of the profession to regulate itself and to protect the public; and
- (g) Publishing a summary of the Decision and Reasons with names will protect the public, maintain public confidence in the ability of the profession to regulate itself and provide a general deterrence.

The written summary of the Decision and Reasons was signed by Brian Ross, P.Eng., as chair on behalf of the other members of the discipline panel: Ishwar Bhatia, P.Eng., Colin Cantlie, P.Eng., Martha Stauch, and Michael Wesa, P.Eng.



# OPEA CALL FOR NOMINATIONS

Nominations are being accepted for the 2015 Ontario Professional Engineers Awards (OPEA).

Now in their 68th year, the OPEAs showcase Ontario professional engineers who have made outstanding contributions to their profession and community. Nominate an exceptional engineer or, for the first time, a team of engineers who have led successful engineering projects. OPEA recipients are honoured annually in November at a black-tie gala hosted jointly by the Ontario Society of Professional Engineers and Professional Engineers Ontario.



## THE AWARDS

### GOLD MEDAL

The premier award, the Gold Medal recognizes commitment to public service, technical excellence and outstanding professional leadership.

### ENGINEERING PROJECT OR ACHIEVEMENT AWARD

This new award recognizes a team of engineers who have conceived of, designed and executed an outstanding project or achievement that has had a significant, positive impact on society, industry or engineering.

### CITIZENSHIP AWARD

Those who earn this award have given freely of their time, professional experience and engineering expertise—to the benefit of humanity.

### ENGINEERING MEDAL

The Engineering Medal recognizes professional engineers who have improved our quality of life through the ingenious application of their engineering skills, and whose achievements rise significantly above the normally high standards of the profession. It can be awarded in the categories of:

#### Engineering Excellence

Recognizes overall excellence in the practice of engineering, where the innovative application of engineering knowledge and principles has solved a unique problem, led to advanced products, or produced exceptional results

#### Management

Awarded for managing and directing engineering projects or enterprises, where innovative management practice has contributed significantly to the overall excellence of the engineering achievement

#### Research and Development

Awarded for using new knowledge in developing useful, novel applications or advancing engineering knowledge or applied science, or discovering or extending any of the engineering or natural sciences

#### Entrepreneurship

Awarded for applying new technologies or innovative approaches that have enabled new companies to get started, and/or assisted established companies to grow in new directions

#### Young Engineer

Awarded to outstanding young Ontario engineers who have made exceptional achievements in their chosen fields. Candidates must be no older than 35 as of December 31 in the year the nomination is submitted and have demonstrated excellence in their careers as well as in community and professional participation

### NEW FOR 2015!

- The OPEA deadline is now the last Wednesday in February.
- The Engineering Project or Achievement Award has been added to the OPEA program.

### ELIGIBILITY

More information about the awards, including selection criteria and nomination forms, is available at [www.peo.on.ca](http://www.peo.on.ca), or by email at [awards@peo.on.ca](mailto:awards@peo.on.ca).

### THE DEADLINE

Nominations are due by 4 p.m. EST on **Wednesday, February 25, 2015**, but they may be submitted at any time during the year.

# L'ÉCOLE POLYTECHNIQUE

25 years later: What's changed? What hasn't?



*A quarter century after one of the darkest days in engineering—and Canadian—history, the quest for diversity and inclusiveness in the profession goes on.*

*By Michael Mastromatteo*

**A**lmost 25 years ago, on December 6, 1989, a deranged young man named Marc Lépine, ranting about his hatred of feminists and female engineers, entered an engineering lecture hall at l'École Polytechnique de Montréal, ordered the men out of the room and shouted in French: "I am fighting feminism. You're women. You're going to be engineers. I hate feminists."

He then opened fire with a semi-automatic rifle and, within 20 minutes, 14 women (12 engineering students, a nursing student and a university employee) were dead and 14 others were wounded. The spree ended only when the gunman turned his weapon on himself.

At the time, it was one of the worst mass killings in Canadian history, and rocked not only the engineering profession, but also Canadian society in general.

In the immediate aftermath of the event, the Canadian Committee on Women in Engineering (CCWIE), a federal government/private sector initiative established early in 1990, spent two years researching employment conditions for female engineers and effective practices to recruit them, and held public hearings across Canada to hear the experiences



of women in the profession. It delivered its final report, containing 29 recommendations for recruiting women into the profession, early in 1992.

Additionally, in 1991 the Canadian government established December 6 as the National Day of Remembrance and Action on Violence Against Women (White Ribbon Day). It was one of many memorials and activities intended to make something positive, or at least expatiating, out of the tragedy.

### HONOURING THEIR MEMORY

For its part, one of the first initiatives of Ontario's engineering community was to create the Canadian Engineering Memorial Foundation (CEMF). The effort to establish the CEMF in 1990 was led by the late Claudette MacKay-Lassonde, P.Eng., PEO's first female president (1986-1987) and a graduate of l'École Polytechnique, along with a number of other concerned engineers. Through a concerted fundraising effort involving contributions from large corporations and many individual engineers, the CEMF established scholarships for female students so they might make positive contributions to society through the engineering profession.

Committed to creating a world where engineering meets societal needs by engaging the skills and talents of women and men alike, as of 2014, it had awarded more than 200 scholarships to more than 600 applicants.

"From a horrific event, a small but dedicated group of volunteers and staff have worked hard over the past 25 years to raise money and manage the scholarship process," says CEMF President Deborah Wolfe, P.Eng., FEC. "The women who win the scholarships are introduced to the engineering profession through attendance at Engineers Canada's annual general meeting. They are also required to give at least one presentation about engineering to high school girls before they receive their full scholarship payment, increasing the visibility of engineering in high schools across the country."

Wolfe says the number of scholarships has grown over the years from six to 13 (as of 2015). New for 2015 is the Marie Carter Memorial Undergraduate Engineering Scholarship, created in memory of a long-time senior staff member at Engineers Canada.

### EVENTS MAGNIFIED MOMENTUM FOR CHANGE

While the l'École Polytechnique tragedy focused attention on the low numbers of women in engineering, PEO's efforts to make the profession more welcoming to women began in earnest more than three years before, when, as president-elect, MacKay-Lassonde championed a think tank on women in engineering. Convened in February 1986, the event produced a report, *Women in Engineering, Gaining Perspective* that made 11 recommendations, including the creation of a women in engineering task force, which was approved by PEO council in April 1986. Two years later, council established the task force as a standing committee, the Women in Engineering Advisory Committee (WEAC). In 2003, WEAC operations were transferred to the Ontario Society of Professional Engineers (OSPE) as a member-interest activity.

Márta Ecsedi, P.Eng., FEC, a former PEO councillor and Professional Engineers Awards Committee chair, who currently chairs PEO's Equity and Diversity Committee (EDC), was the founding chair of WEAC.

On December 6, 1989, Ecsedi was working in the engineering department of Bell Canada, and one of her tasks was to help her employer recruit promising engineering graduates from Ontario universities. It was during a recruitment interview with a male student that she first heard the terrible news and she still gets emotional when thinking back on it.

"Needless to say, I was a complete mess afterward," Ecsedi says. "But I felt I owed it to the students to get through those interviews that day."

Like MacKay-Lassonde, Ecsedi had long advocated for equitable treatment of women in engineering, recognizing that although her own engineering study and early career years weren't particularly difficult, the potential for harassment and sexist behaviour might increase as more young women entered the profession.

As profoundly shocking as the events of December 6 were at the time, Ecsedi believes they greatly magnified the urgency and momentum of what she and others were already doing. "There was a domino



Candlelight vigils, held on each anniversary of the December 6, 1989 shooting at L'École Polytechnique de Montréal, are one of the most poignant ways of remembering the 14 women who were killed in the incident.

A number of communities coast to coast have also erected monuments with the names of the 14 victims inscribed. Below is one such monument on the campus of L'École Polytechnique.



effect after the Montreal massacre, to the positive, because if you look at the statistics afterwards, so many actions went into play at that time,” she says. “So many universities across the country put initiatives [for women] into place, including my own alma mater, the University of Toronto.”

### WOMEN IN THE PROFESSIONS

Ecsedi says another positive outcome was the Natural Sciences and Engineering Research Council (NSERC) initiative to establish chairs for women in the professions, first nationally and then in five different regions across Canada.

Retired from Carleton University and the University of Ottawa, where she was a professor of systems and computer engineering, Monique Frize, PhD, P.Eng., FEC, twice served as an NSERC women in engineering chair, first at the University of New Brunswick in 1989, and then in Ottawa in 1997.

The first chair of PEO’s EDC, Frize also chaired the CCWIE from 1990 to 1992 as it researched conditions for women in engineering. She believes there has been some movement toward a more inclusive profession since 1989, but there is still work to be done.

In a talk prepared for the 20th anniversary of the shootings, Frize reflected on the progress, noting that the fundamental question to be asked was:

“Is the workplace safer and more equitable than it was? Although some things have improved, it is imperative that we see more progress.”

### FIRST-PERSON ACCOUNT

Engineers Canada director and Ordre des ingénieurs du Québec volunteer Sandra Gwozdz, ing., FIC, a project engineer with Bombardier Aerospace near Montreal, was a student at L'École Polytechnique on December 6, 1989. In fact, she was in an adjacent classroom on the Wednesday evening of the shooting.

“At first, we thought it was some kind of joke, since it was the last day of the fall session,” Gwozdz recalls. “A minute later, we asked a student to check what was going on. When he came back, he explained the situation and told us to turn off the lights and stay in the class. We first thought there were two or three shooters there. After another 15 minutes, we went outside of the room and many people began to evacuate as fast as we could.”

As might be expected among a close-knit group of students, Gwozdz was good friends with most of the victims. “One woman who was in first year with me was in the room with [the shooter] and was killed, and another student in my class went outside to make photocopies. She

## “It is once I hit the job market that I really realized how the engineering profession was diverse and opened so many doors.” Sandra Gwozdz, ing., FIC

didn't come back. Thankfully, she didn't die, but she was shot in the back and she missed the next semester.”

Gwozdz has remained stoic in the intervening years (she graduated from l'École Polytechnique in 1991) and says she has never felt threatened or intimidated since starting her professional engineering career. She still extols the benefits of engineering as a positive career choice, and participates in an annual science fair promoting the profession to students and young women.

“The incident of December 6 had no influence on my career choice,” Gwozdz says. “Although my engineering studies were somewhat a random selection, once well underway at the university, I quickly realized I had made the right career choice. It is once I hit the job market that I really realized how the engineering profession was diverse and opened so many doors.”

### WHAT THE NUMBERS SHOW

There have been many studies of engineering enrolment by gender since December 1989. In 2012, Engineers Canada published *Where it Starts, Canadian Engineers for Tomorrow*, which examined trends in engineering enrolment and degrees awarded from 2008 to 2012. It found that women reached a peak of 20.6 per cent of total enrolment in engineering in 2001, with the level fluctuating between 17 and 19 per cent for the greater part of the decade since. For graduate programs, however, cumulative growth in female graduate enrolment has out-paced growth in male enrolment.

Female engineers active in the profession's diversity efforts admit to a certain level of progress (PEO's inclusion of harassment as professional misconduct in Regulation 941/90 in 2000, for example, and, more recently, council's approval of an equity and diversity policy and implementation plan), but remain concerned about career limitations, the so-called glass ceiling, and the under-representation of women and visible minorities in the profession. As well, there are periodic reports of hazing and other sexist or discriminatory behaviour, particularly during university frosh weeks.

Certainly, the events of December 6, 1989, forced leaders in the engineering community to take stock of prevailing attitudes toward female engineering students and practitioners, and dramatically increased the momentum for change.

Yet it's also worth heeding the words of l'École Polytechnique graduate Gwozdz, who was at the school that evening: “The unfortunate

Sandra Gwozdz, ing., FIC, of Bombardier Aerospace in Montreal, did not allow the shootings at l'École Polytechnique in 1989 to interfere with her plans for an engineering career.



event of December 6 was the result of a sick individual. Such a tragedy can happen anywhere and I quickly realized that we need to continue in life and not let our choices and dreams be destroyed by a monkey wrench. It made me realize at a very young age that there will always be events or pitfalls that can stop us from moving and that it is up to us to make decisions and take actions to continue moving forward. Our achievements and fulfillment are not the results of coincidence but rather of our efforts and actions.” Σ

Many thanks to Hèlene Dutrisac, P.Eng., of Ottawa, who offered her time and help to translate material for this feature.

# WE HAVE TO START SOMEWHERE

By Patrick Quinn, PhD (Hon.), P.Eng., FEC

## From Montreal 1989, a personal reflection

- Geneviève Bergeron (born 1968), civil engineering student
- Hélène Colgan (born 1966), mechanical engineering student
- Nathalie Croteau (born 1966), mechanical engineering student
- Barbara Daigneault (born 1967), mechanical engineering student
- Anne-Marie Edward (born 1968), chemical engineering student
- Maud Haviernick (born 1960), materials engineering student
- Barbara Klucznik-Widajewicz (born 1958), nursing student
- Maryse Laganière (born 1964), budget clerk in l'École Polytechnique's finance department
- Maryse Leclair (born 1966), materials engineering student
- Anne-Marie Lemay (born 1967), mechanical engineering student
- Sonia Pelletier (born 1961), mechanical engineering student
- Michèle Richard (born 1968), materials engineering student
- Annie St-Arneault (born 1966), mechanical engineering student
- Annie Turcotte (born 1969), materials engineering student

It was before the age of cell phones, emails, Twitter and tweets. On the morning of December 7, 1989, I was dropped off at the Vancouver airport for a flight back to Toronto. A newspaper informed me there had been a shooting rampage the day before at l'École Polytechnique in which women engineering students were targeted and 14 women had been killed.

I had worked and was active in the engineering community in Montreal for a number of years, and had a daughter in university. On the flight back, I grappled with the horror and pain that must have been engulfing the victims' families. I could feel their heartbreak in a personal way and the long flight home became an intense retrospection on violence against women and the ambience of engineering.

By the time I landed, I was quite definite about where I stood; if there was something I could do to change both, I was committed.

The following week, our office bought advertising space in *The Globe and Mail* that said, in part, that we pledged, as engineers, to make more public our support for women in, or wishing to join, our profession. We also expressed our dedicated opposition to events or practices that offend women's dignity or roles, or impede their progress to genuine equality.

It brought a torrent of letters from women associated with engineers and engineering. They poured out their emotional responses in many touching words.

Then came an incident of abuse of a woman on campus by engineering students, which I responded to by a letter to the university, and to my colleague consultants in Toronto. In the letter, I suggested we treat graduates from universities where such incidents occurred differently when it comes to employment. It was through this letter that my 15 minutes of fame arose. A CBC reporter got wind of the letter and interviewed me for national radio, which led to all kinds of national and local exposure. The arguments and debates raged for a while and then drifted away.

Looking back over 25 years, there have been amazing changes in society, particularly in the information technology areas, which have made communications instant and powerful, and similar progress in the process of practising engineering. In areas like violence against women, or the concerns about progress around the multi-faceted issues about women and engineering, there has been little progress and, even more disheartening, a clear ambivalence toward finding the answers so clearly needed.

The issue of violence against women screams for individual, public and government reactions. Women disappear from our streets by the dozens before it is even a public issue; Aboriginal people take to dragging a river for their lost girls and women; a former US president (Jimmy Carter) titles his book *A Call to Action* in which the basic premise is "...the world's discrimination and violence against women and girls is the most serious, pervasive and ignored violation of basic human rights."

Prime Minister Stephen Harper's response to a call for a public inquiry on violence against Aboriginal women is the same as was received to pleas for a public inquiry after the Montreal murders—it is not going to happen.

In engineering, we continue to have anti-women incidents bubble to the surface on university campuses. I recently wrote in *Engineering Dimensions* that even universities with progressive attitudes toward women are dealing with a resurgence of offensive and insensitive behaviours. As such, something needs to be done by those who speak for our profession. I also

wrote that violence against women must be more of a real concern, and anything associated with our profession perceived in any way to promote or condone it needs to be eradicated.

When I wrote similarly 25 years ago, there were a few defenders of the engineering environment who came forward to minimize or laugh off the stupid (to them) behaviour of students. They did this while acknowledging that offensive and insensitive events reinforced the public perception of engineering as a male-dominated profession and its students as rough-acting boors indulged by their faculties.

Today, it is seen as smart crisis management to stay away from debate and recognize a public attention span that will quickly move on to more immediate issues. And engineering does not have leaders or leadership committed to the eradication of what I wrote was a stain on our profession.

In his book, President Carter decried the rape statistics of American universities. The CBC, in a special documentary, sets out what it suggests is a rape culture at Canadian universities. When anything bad is attributed to students, the first response of many of those who remember their undergraduate experiences on campus is to associate it with engineers.

In the CBC piece, a young, prominent lawyer (I note “young” because generational gaps are important in perceptions of values and morals) found it scary when a female university chancellor condemned locker room language. He asked if we are going to reprogram all males between the ages of 18 and 22 who want to talk about women in the locker room, and opined that this was taking political correctness too far. Really! He needs to try to understand the world through a woman’s eyes.

Violence against women is a social issue, not only in universities, but also in society at large. Locker room language is part of a continuum. A shining light in the CBC piece was the president of Lakehead University, Brian Stevenson, PhD, who acknowledged this reality explicitly. When told that educating people on the laws around sexual assault was easy but asking students to change their behaviours and opinions is a tough nut to crack, his simple answer was profound: “We have to start somewhere.”

For me, that somewhere was 25 years ago and I find progress since unacceptable. As an engineering community, our voices are PEO and the Ontario Society of Professional Engineers and, while these have been fairly successful in supporting those working to remove the obstacles that once made a woman’s entry to our profession difficult, their voices and actions in the fight against violence against women, or a rape culture at universities, are mostly silent. They may think it is not their role but, as Stevenson said, we have to start somewhere—and actually everywhere—and that has to include doing something about a male-dominated major profession not making progress in the basic area of diversity and inclusiveness.

I still wonder today about Montreal and what might have changed the outcome of December 6, 1989. Engineering attracts males who are influenced by and become the explorers of our planet and of space, who take huge risks in everyday life by building incredible structures. Their bravery is taken for granted by society. In mass calamities, we frequently hear of individual, even life-sacrificing, gallantry. In Montreal, the men were told to leave and they left. There were no stories of anyone remonstrating or actually taking some frontal, brave action to even slow down the killer. To this day, we don’t seem to want to know why. Articles exploring these topics are not welcomed by publications. It is almost as though we have accepted shame and don’t want to talk about it.

We could learn a lot more by facing our fears, by having the discussions, by having public inquiries such as those sought by indigenous people on why their women are victims of violence unacceptable in any civilized country. Somewhere, a start can and must be made.

What can be done by the engineering community? Here are my suggestions:

- PEO meets regularly with the Council of Ontario Deans of Engineering. A permanent item on the agenda should be an open and frank discussion on the culture and climate at universities, including experiences of concern and finding a uniform approach to handling them;
- Universities should be encouraged to establish a code of conduct, to teach this code and encourage its acceptance, and make sure students are held accountable for their actions;
- PEO, through its influence on the Canadian Engineering Accreditation Board, should promote a national position on consent in sexual assault cases, such as that recently enacted in law in California, which clearly defines acceptable joint consent in sexual interplay; and
- Character is one of the criteria for entering a profession. Students should be informed on criteria for judging this and on the risks of being excluded from professional registration for not living up to these standards. Σ

**Patrick Quinn, PhD (Hon.), P.Eng., FEC, is a two-time PEO president.**

# BUILDING PROFILE: CONNECTING MPPs TO ENGINEERING IN THE COMMUNITY

By Howard Brown and Kaitlynn Dodge

THEY SAY ALL politics is local.

It's for this reason PEO created the Take Your MPP to Work program in 2013. After building a network across the province that connects MPPs with local engineers, PEO wanted to take its Government Liaison Program up a notch.

Connecting MPPs with organizations doing engineering in their ridings was seen as a new way to showcase the importance of engineering in the public interest.

"It's one thing to give MPPs a local engineer who is a constituent to connect with them on issues of regulatory importance," says Jeannette Chau,

P.Eng., PEO manager of student and government liaison programs. "It's a whole different experience when MPPs get to see where engineers work and the companies that are offering high-quality jobs and services in their community."

One of the best examples of the Take Your MPP to Work program to date was an event hosted by PEO's West Toronto Chapter on April 22.

Chapter organizers invited MPP Mike Colle (Eglinton-Lawrence), parliamentary assistant to the minister of transportation, to the Toronto Rehabilitation Institute to see how engineers play a role in improving quality of life for people who are injured.

Colle met with a number of the institute's engineers and scientists, including Jennifer Campos, PhD, chief scientist, Tilak Dutta, PhD, scientific associate, and Susan Gorski, P.Eng., chief CEAL engineer, and toured various demonstrations of new technology that fulfill the institute's mandate of helping people overcome the challenges of disabling injury and illness- or age-related health conditions.

Colle says exposing MPPs to this type of engineering activity "will create a bond forever." He also shared the event on Facebook and Twitter to create buzz among MPPs.

Another successful example of connecting MPPs with engineering in their community happened thanks to PEO's Lambton Chapter.

On April 25, the chapter invited PC Natural Resources Critic Bob Bailey, MPP (Sarnia-Lambton), to meet with engineers and tour Shell's Sarnia Manufacturing Centre.

John Hettinga, P.Eng., PEO Lambton Chapter GLP director, and Phil Lasek, P.Eng., chapter chair, spearheaded the event.

Discussions with Bailey included how industry, government and education can work together to provide skills to newly minted engineers.

Through these events, MPPs can see first-hand how engineers contribute to local communities, which is the key message the program hopes to bring home.

The Take Your MPP to Work program has already hosted NDP Municipal Affairs Critic Cindy Forster, MPP (Welland), and Minister of Labour Kevin Flynn, MPP (Oakville), and, now, Colle and Bailey. The goal is to have even more MPPs gain first-hand knowledge of what engineers do, so they can fully understand the contributions of the province's licensed professional engineers.  $\Sigma$

**Howard Brown is president of Brown & Cohen Communications & Public Affairs Inc. and PEO's government relations consultant. Kaitlynn Dodge is account director at Brown & Cohen and PEO's government relations coordinator.**



Mike Colle, MPP Eglinton-Lawrence (front), participated in PEO West Toronto Chapter's Take Your MPP to Work Day at Toronto Rehabilitation Institute on April 22. With Colle are (from left), Parvin Marzban, P.Eng., West Toronto Chapter chair, Georg Kralik, P.Eng., former chair, Rob Willson, P.Eng., PEO councillor, Jacob Kachuba, P.Eng., and Jennifer Campos, PhD, the institute's chief scientist.



# [ DATEPAD ]

## NOVEMBER 2014

### NOVEMBER 7-9

ESSCO-PEO Student Conference, Toronto, ON  
[www.essco.ca](http://www.essco.ca)



### NOVEMBER 13-14

Energy Management—Cutting Costs to Increase Profits (course), Mississauga, ON  
[www.epic-edu.com](http://www.epic-edu.com)

### NOVEMBER 14-20

ASME 2014 International Mechanical Engineering Congress & Exposition, Montreal, QC  
[www.asmeconferences.org/congress2014](http://www.asmeconferences.org/congress2014)

### NOVEMBER 19-21

20th IEEE Pacific Rim International Symposium on Dependable Computing, Singapore  
[prdc.dependability.org/PRDC2014](http://prdc.dependability.org/PRDC2014)

### NOVEMBER 19-21

Advanced Concrete Technology for Durable & Sustainable Civil Infrastructure (course), Mississauga, ON  
[www.epic-edu.com](http://www.epic-edu.com)

### NOVEMBER 22

Ontario Professional Engineers Awards Gala, Mississauga, ON  
[www.ospe.on.ca](http://www.ospe.on.ca)

### NOVEMBER 24-26

Designing Wastewater Pumping Systems & Lift Stations (course), Ottawa, ON  
[www.epic-edu.com](http://www.epic-edu.com)

### NOVEMBER 26-28

Total Building Commissioning, Recommissioning and Retro-commissioning Process (course), Mississauga, ON  
[www.epic-edu.com](http://www.epic-edu.com)

## DECEMBER 2014

### DECEMBER 1-3

Real Time Networking, Mississauga, ON  
[www.epic-edu.com](http://www.epic-edu.com)

### DECEMBER 2-5

ARFTG 84th Microwave Measurement Conference, Boulder, CO  
[www.arftg.org](http://www.arftg.org)



### DECEMBER 2-5

IEEE Real-Time Systems Symposium, Rome, Italy  
[2014.rtss.org](http://2014.rtss.org)

### DECEMBER 3-4

Second Annual Summit on Data Analytics for Utilities, Toronto, ON  
[www.utilitydataconference.com](http://www.utilitydataconference.com)

### DECEMBER 3-5

Construct Canada, Toronto, ON  
[www.constructcanada.com](http://www.constructcanada.com)

### DECEMBER 3-6

13th International Conference on Machine Learning & Applications, Detroit, MI  
[www.icmla-conference.org/icmla14](http://www.icmla-conference.org/icmla14)

### DECEMBER 5

Deriving Rainfall IDF Curves for Future Climate Scenarios (workshop), Halifax, NS  
[iclr.org/images/IDFCC\\_Workshop\\_Flyer.pdf](http://iclr.org/images/IDFCC_Workshop_Flyer.pdf)



### DECEMBER 8-10

Structural Rehabilitation of Bridges, Mississauga, ON  
[www.epic-edu.com](http://www.epic-edu.com)

### DECEMBER 14-17

IEEE International Conference on Data Mining, Shenzhen, China  
[icdm2014.sfu.ca](http://icdm2014.sfu.ca)

### DECEMBER 15-17

ASME 2014 Gas Turbine India Conference, New Delhi, India  
[www.asmeconferences.org/GTIndia2014](http://www.asmeconferences.org/GTIndia2014)

## JANUARY 2015

### JANUARY 5-6

7th International Conference on Computer and Automation Engineering, Bali, Indonesia  
[www.iccae.org](http://www.iccae.org)



### JANUARY 11-14

5th International Conference on Biomolecular Engineering, Lost Pines, TX  
[www.aiche.org/sbe/conferences/international-conference-biomolecular-engineering-icbe/2015](http://www.aiche.org/sbe/conferences/international-conference-biomolecular-engineering-icbe/2015)

### JANUARY 23-24

International Conference on Materials Science and Engineering (ICMSE 2015), Paris, France  
[www.waset.org/conference/2015/01/paris/ICMSE](http://www.waset.org/conference/2015/01/paris/ICMSE)

## COUNCIL APPROVES AMENDMENTS TO PEO'S EXPANDED PUBLIC INFORMATION MODEL

496TH MEETING, SEPTEMBER 25, 26, 2014

By Jennifer Coombes

AT THE SEPTEMBER meeting, council approved revisions to PEO's Expanded Public Information Model (EPIM) and privacy policy regarding the disclosure of information about the educational backgrounds of members and engineering interns (EITs), and whether members are deceased. PEO Registrar Gerard McDonald, P.Eng., recommended that council approve the information "to provide the public with access to information that will allow identification of a practitioner, facilitate public safety and uphold the requirements under s. 2(3) of the *Professional Engineers Act* (principal object)."

Specifically, the EPIM will make public a member's degree(s) at the time of registration, the institution granting the degree(s), year of graduation, discipline of degree(s), and deceased status. For EITs, the new information made public will include degree(s) at the time of registration, the institution granting the degree(s), year of graduation and discipline of degree(s).

PEO's privacy policy will also be updated by inserting the following into its principle 5:

"PEO discloses information concerning the death of a member to protect the public by assisting those who may have dealt with him or her professionally in the past, who are looking to work with the deceased member, to prevent others from misrepresenting themselves in respect of the deceased member and to recognize and honour the deceased member's contribution to the profession."

### ELECTION MATTERS

At the September meeting, council approved several recommendations of the Central Election and Search Committee to change election procedures to deal with issues that arose in connection with the 2014 council elections. The recommendations are to be implemented for the 2015 council elections.

The recommendations are:

- hold all-candidates meetings the week before voting begins;
- have council approve the nomination acceptance and petition forms and amend the voting procedures to state that PEO will accept only approved forms completed in all respects, without amendment in any way;
- include a statement in the publicity procedures that to participate, candidates must attend all-candidates meetings in person or by phone and may not be represented by proxy. As well, prepared statements won't be permitted from candidates who are not in attendance in person or by phone nor will the moderator read a candidate's statement;
- highlight the elections in *Engineering Dimensions* and include an article on the importance of voting;

- contact candidates if material is submitted without identifying information or another glaring omission and ask if they want to resubmit the material. Give the chief elections officer the authority to remove material or seek a legal opinion if the material could be deemed libelous and to remove the material if advised by legal counsel;
- ensure PEO is de-blacklisted from the blacklisting service SpamCop.net before election-related eblasts are sent;
- explore with the official elections agent alternatives to facilitate voter identification to accommodate members who lose or misplace their election material and associated unique control number;
- include on the "vote now" button on PEO's voting site information that the button is to be used only for Internet voting and provide the phone number for those wishing to register their vote by phone; and
- expand the voting instructions to state members voting by phone must speak only when prompted and provide no other information than the number that appears beside their chosen candidate.

The 2015 council election call for nominations, voting procedures and election publicity procedures begin on page 51 of this issue.

### NO CHANGE TO RETIRED MEMBER FEE REMISSIONS

PEO's current fee remission policy for retired members will remain unchanged, as a result of council defeating a proposal introduced at the June council meeting that a change be made to the eligibility criteria. PEO's policy, which has been in place since January 1, 2005, states that those eligible for the retired fee remission are: "Any member who has retired from the practice of professional engineering and whose age plus years of registration as a professional engineer in Canada equals or exceeds 90.

An item on the agenda of the June council meeting proposed this criteria be replaced with "a statutory statement and/or objective evidence of being a retired member" to accommodate members who were licensed mid-career or who retire at a younger age, particularly federal and provincial government employees, who might not be able to reach the 90-year requirement.

Council discussed the matter in June, but referred the proposal to PEO's Licensing and Finance division for further analysis. At the September meeting, Licensing and Finance recommended the policy for retired members remain as is. Σ



## 2015 COUNCIL ELECTIONS CALL FOR CANDIDATES

All PEO members are invited to become candidates for the positions of **president-elect**, **vice president**, **councillor-at-large** and **regional councillor** (one for each of PEO's five regions) on PEO council.

1. Any member may be nominated for election to council as **president-elect**, **vice president** or **councillor-at-large**, by at least 15 other members. The nomination must include at least one member resident in each region. [Regulation 941/90, s. 14(1)]
  - (a) The position of **president-elect** is for a one-year term, after which the incumbent will serve a one-year term as president and a one-year term as past president.
  - (b) The position of **vice president** is for a one-year term.
  - (c) Two **councillor-at-large** positions, each for a two-year term.
2. Any member residing in a region may be nominated for election to council as a **regional councillor** for that region by at least 15 other members who reside in the region. [Regulation 941/90, s. 14(2) and s. 15.1(2)]
  - (a) The position of **regional councillor** is for a two-year term.

A member nominated for election to council must complete a nomination acceptance form that states he or she is a Canadian citizen or has the status of a permanent resident of Canada and is a resident in Ontario. [Section 3(3) of the *Professional Engineers Act*] and consents to the nomination [Regulation 941/90, s. 15].

Nomination petitions for collection of nominators' signatures and nomination acceptance forms may be obtained from the PEO website at [www.peo.on.ca](http://www.peo.on.ca), or Ralph Martin, PEO, 40 Sheppard Avenue West, Suite 101, Toronto ON M2N 6K9. Email: [rmartin@peo.on.ca](mailto:rmartin@peo.on.ca); Tel: 416-840-1115; 800-339-3716, ext. 1115.

Nomination petitions and nomination acceptance forms are to be sent only electronically and only to the chief elections officer, [chiefelectionsofficer@peo.on.ca](mailto:chiefelectionsofficer@peo.on.ca), by 4:00 p.m., December 5, 2014. No personal delivery of forms will be accepted.

For further information on becoming a candidate, please refer to the *2015 Council Elections Guide* posted on PEO's website.

## 2015 VOTING PROCEDURES

The 2015 voting and election publicity procedures were approved by the council of PEO in September 2014. Candidates are responsible for familiarizing themselves with these procedures. Any deviation could result in a nomination being considered invalid. Candidates are urged to submit nominations and election material well in advance of published deadlines so that irregularities may be corrected before the established deadlines. Nominees' names are made available as received; all other election material is considered confidential until published by PEO.

1. The schedule for the elections to the 2015-2016 council is as follows:

Date nominations open	October 27, 2014
Date nominations close	4:00 p.m., December 5, 2014
Date PEO's membership roster will be closed for the purposes of members' eligible to automatically receive election material <sup>1</sup>	January 14, 2015
Date a list of candidates, their statements and voting instructions will be mailed to members	no later than January 23, 2015
Date voting will commence	on the date that the voting packages are mailed to members, no later than January 23, 2015
Date voting closes	4:00 p.m., February 27, 2015

Note: All times noted in these procedures are Eastern Time.

<sup>1</sup>Members licensed after this date may call in and request that election information be sent to them by regular mail or, upon prior written consent by the member, via email or telephone.

2. Candidates' names will be listed in alphabetical sequence by position on the list of candidates mailed to members and on PEO's website. However, the order of their names will be randomized when voters sign in to the voting site to vote.
3. A person may be nominated for only one position.
4. Nomination papers are to be submitted only by email or fax for tracking purposes. Forms will not be accepted in any other format (e.g. personal delivery, courier, regular mail).
5. Only nomination acceptance and petition forms completed in all respects, without amendment in any way whatsoever, will be accepted.
6. Candidates will be advised when a member of the Central Election and Search Committee has declared a conflict of interest should an issue arise that requires the consideration of the committee.
7. An independent agency has been appointed by council to receive, control, process and report on all cast ballots. This "official elections agent" will be identified to the members with the voting material.

## [ PEO ELECTIONS ]

8. If the official elections agent is notified that an elector has not received a complete election information package, the official elections agent shall verify the identity of the elector and may either provide a complete, duplicate election information package to the elector, which is to be marked “duplicate,” by regular mail or email, or provide the voter’s unique control number to the voter and offer assistance via telephone. In order to receive such information via email, the elector must provide prior written consent to the use of his or her email address for this purpose.
9. Council has appointed a Central Election and Search Committee to:
  - encourage members to seek nomination for election to the council as president-elect, vice president or a councillor-at-large;
  - assist the chief elections officer as may be required by him or her;
  - receive and respond to complaints regarding the procedures for nominating, electing and voting for members to the council; and
  - conduct an annual review of the elections process and report to the September 2015 council meeting.
10. Council has appointed a Regional Election and Search Committee for each region to:
  - encourage members residing in each region to seek nomination for election to the council as a regional councillor.
11. Council has appointed an independent chief elections officer to oversee the election process and to ensure that the nomination, election and voting are conducted in accordance with the procedures approved by council.
12. The chief elections officer will be available to answer questions and complaints regarding the procedures for nominating, electing and voting for members to the council. Any such complaints or matters that the chief elections officer cannot resolve will be forwarded by the chief elections officer to the Central Election and Search Committee for final resolution. Staff is explicitly prohibited from handling and resolving complaints and questions, other than for administrative purposes (e.g. forwarding a received complaint or question to the chief elections officer).
13. On or before the close of nominations on December 5, 2014, the president will appoint three members or councillors who are not running in the election as returning officers to:
  - approve the final count of ballots;
  - make any investigation and inquiry as they consider necessary or desirable for the purpose of ensuring the integrity of the counting of the vote; and
  - report the results of the vote to the registrar not later than March 13, 2015.
14. Returning officers shall receive a per diem of \$250 plus reasonable expenses to exercise the duties outlined above.
15. If a candidate withdraws his or her nomination for election to PEO council prior to the preparation of the voting site, the chief elections officer shall not place the candidate’s name on the voting site of the official elections agent or on the list of candidates sent to members and shall communicate to members that the candidate has withdrawn from the election. If the candidate withdraws from the election after the electronic voting site has been prepared, the chief elections officer will instruct the official elections agent to adjust the voting site to reflect the candidate’s withdrawal.
16. Voting will be by electronic means only (Internet and telephone).
17. All voting instructions, a list of candidates and their election publicity material, will be sent by lettermail to members at the address listed on PEO’s register. All voters will be provided with detailed voting instructions on how to vote electronically.
18. Verification of eligibility, validity or entitlement of all votes received will be required by the official elections agent. Verification by the official elections agent will be by unique control number to be provided to voters with detailed instructions on how to vote by the Internet and by telephone.
19. The official elections agent shall keep a running total of the electronic ballot count and shall make the results available to the candidates through a secure website not before the close of the voting period and not later than 9:00 p.m. on February 27, 2015. All candidates will be provided with a unique control number giving them access to the secure website of the official elections agent.
20. Voters need not vote in each category to make the vote valid.
21. There shall be an automatic recount of the ballots for a given candidate category for election to council or bylaw confirmation where the vote total on any candidate category for election to council between the candidate receiving the highest number of votes cast and the candidate receiving the next highest number of votes cast is 25 votes or fewer for that candidate category or where the votes cast between confirming the bylaw and rejecting the bylaw is 25 votes or fewer.
22. Reporting of the final vote counts, including ballots cast for candidates that may have withdrawn their candidacy after the opening of voting, to PEO will be done by the returning officers to the registrar, who will advise the candidates and council in writing at the earliest opportunity.
23. Certification of all data will be done by the official elections agent.
24. The official elections agent shall not disclose individual voter preferences.
25. Upon the direction of the council following receipt of the election results, the official

# 2015 ELECTION PUBLICITY PROCEDURES

## IMPORTANT DATES TO REMEMBER

Deadline for receipt of publicity materials for publication in <i>Engineering Dimensions</i> and on PEO's website, including URLs to candidates' own websites	4:00 p.m., December 11, 2014
Deadline for submission of material for eblasts of candidate material to members	1. January 8, 2015–1st eblast 2. January 22, 2015–2nd eblast 3. February 5, 2015–3rd eblast
Dates of eblasts to members	1. January 15, 2015 2. January 29, 2015 3. February 5, 2015
Date of posting period	January 2015 to February 28, 2015
Dates of voting period	January 23, 2015 to 4:00 p.m., February 27, 2015

Note: All times indicated in these procedures are Eastern Time

- elections agent will be instructed to remove the electronic voting sites from its records.
26. Election envelopes that are returned to PEO as undeliverable are to remain unopened and stored in a locked cabinet in the Document Management Centre (DMC) without contacting the member until such time as the election results are finalized and no longer in dispute.
  27. Elections staff shall respond to any requests for new packages as usual (e.g. if the member advises that he/she has moved and has not received a package, the member is to be directed to the appropriate section on the PEO website where the member may update his/her information with DMC).
  28. DMC staff shall advise elections staff when the member information has been updated; only then shall the elections staff request the official elections agent to issue a replacement package with the same control number.
  29. Elections staff are not to have access to, or control of, returned envelopes.
  30. After the election results are finalized and no longer in dispute, the chief elections officer shall authorize the DMC to unlock the cabinet containing the unopened, returned ballot envelopes so that it may contact members in an effort to obtain current information.
  31. After the DMC has determined that it has contacted as many members whose envelopes were returned as possible to obtain current information or determine that no further action can be taken to obtain this information, it shall notify the elections staff accordingly and destroy the returned elections envelopes.
  32. Nothing in the foregoing will prevent additions and/or modifications to procedures for a particular election if approved by council.
  33. The election publicity procedures form part of these voting procedures.
  34. All questions from, and replies to, candidates are to be addressed to the chief elections officer:  
By email: [elections@peo.on.ca](mailto:elections@peo.on.ca)  
By mail: Chief Elections Officer  
c/o Professional Engineers Ontario  
101-40 Sheppard Avenue West  
Toronto, ON M2N 6K9

1. Names of nominated candidates will be published to PEO's website as soon as their nomination is verified.
2. Names of all nominated candidates will be forwarded to members of council, chapter chairs and committee chairs, and published on PEO's website, by December 8, 2014.
3. Candidates will have complete control over the content of all their campaign material, including material for publication in *Engineering Dimensions*, on PEO's website and on their own websites. Candidates are reminded that it is readily available to the public and should be in keeping with the dignity of the profession at all times. Material for publishing purposes will be published with a disclaimer. The chief elections officer may seek a legal opinion if the chief elections officer believes campaign material could be deemed libelous, and has the authority to remove the campaign material if so advised by legal counsel.
4. Candidate material may contain personal endorsements provided there is a clear disclaimer indicating that the endorsements are personal and do not reflect or represent the endorsement of PEO council, a PEO chapter or committee, or any organization with which an individual providing an endorsement is affiliated.
5. Candidates will have discretion over the presentation of their material for publishing purposes, including but not limited to font style, size and effects, and are allocated the equivalent of one-half page each in *Engineering Dimensions* (6.531 inches wide x 4.125 inches in height) in which to provide their election material. A template for this purpose is available at [www.peo.on.ca](http://www.peo.on.ca).
6. Candidates will be permitted to include a photograph within their one-half page.
7. All material for publishing on PEO's website and in *Engineering Dimensions* must be submitted to the chief elections officer at [chiefelectionsofficer@peo.on.ca](mailto:chiefelectionsofficer@peo.on.ca) and in accordance with Schedule A attached. Candidates shall not use the PEO logo in their election material.
8. Candidates' material for publication in *Engineering Dimensions* and on the website, including URLs to candidates' own websites, must be forwarded to the chief elections officer at the association's offices or via email at [chiefelectionsofficer@peo.on.ca](mailto:chiefelectionsofficer@peo.on.ca) so that it is received (both electronic copy and hard copy) not later than December 11, 2014 at 4:00 p.m. and in accordance with Schedule A attached. Candidate material will be considered confidential, and

## [ PEO ELECTIONS ]

- will be restricted to staff members required to arrange for publication, until published on PEO's website. Material will be published for all candidates on PEO's website at the same time.
9. If campaign material is submitted by a candidate without identifying information (e.g. name or glaring omission), PEO staff are authorized to contact the candidate and ask if he/she wishes to resubmit material.
  10. Candidate publicity material will be published as a separate insert/section in the January/February 2015 issue of *Engineering Dimensions* and to PEO's website in January 2015 and in the mailing to eligible voters with voting instructions.
  11. Candidates may utilize space on PEO's website, provided they email their material to the chief elections officer in the format set out in Schedule A. This material must be received by the chief elections officer no later than December 11, 2014.
  12. Candidates may submit updates to their material on PEO's website once during the posting period. Any amendments to a candidate's name/designations are to be considered part of the one-time update permitted to their posting during the posting period. Candidates may include links to PEO publications but *not* a URL link to a third party in their material that is to be posted on PEO's website. Links to PEO publications are not considered to be to a third party. For clarity, the only URL link that may be included in a candidate's material on PEO's website is the URL to the candidate's own website.
  13. Candidates may post more comprehensive material on their own websites, to which a link will be provided from PEO's website during the posting period. Candidates may include a URL to third parties **only in their own website material**—not in material that will appear in *Engineering Dimensions*, not in material that is posted on PEO's election site (which includes the 1000-word space they are permitted), nor in eblast material.
  14. PEO will provide three group email distributions to members of candidate publicity material beyond publication in *Engineering Dimensions*. Material must be submitted to the chief elections officer at [chiefelectionsofficer@peo.on.ca](mailto:chiefelectionsofficer@peo.on.ca) in accordance with Schedule A.
  15. Candidates are responsible for responding to replies or questions generated by their email message.
  16. The chief elections officer is responsible for ensuring that all candidate material (whether for *Engineering Dimensions*, PEO's website or eblasts) complies with these procedures. Where it is deemed the material does not satisfy these procedures, the chief elections officer will, within three full business days from receipt of the material by the association, notify the candidate or an appointed alternate, who is expected to be available during this period by telephone or email. The candidate or appointed alternate will have a further three full business days to advise the chief elections officer of the amendment. The candidate is ultimately responsible for meeting this deadline.
  17. Candidates must attend all candidates meetings in person or by telephone in order to participate. Candidates may not be represented by proxy. Prepared statements will not be permitted and the moderator cannot read a statement from a candidate who does not attend the meeting in person or by telephone.
  18. PEO will provide candidates with the opportunity to participate in all candidates meetings, which will be held at PEO offices and which will be video recorded for posting on PEO's website. On the day of the first all candidates meeting, an eblast will be sent to members announcing that all such video recordings will be posted to the PEO website within two business days of each meeting.
  19. Caution is to be exercised in determining the content of issues of membership publications published during the voting period, including chapter newsletters. Editors are to ensure that no election candidate is given additional publicity or opportunities to express viewpoints in issues of membership publications distributed during the voting period from January 23, 2015 until the close of voting on February 27, 2015 beyond his/her candidate material published in the January/February issue of *Engineering Dimensions*, and on the PEO website. This includes photos (with or without captions), references to, or quotes or commentary by, candidates in articles, letters to the editor and opinion pieces. PEO's communications vehicles should be, and should be seen to be, unpartisan. The above does not preclude a PEO publication from including photos of candidates taken during normal PEO activities, e.g. licensing ceremonies, school activities, GLP events, etc., provided there is no expression of viewpoints. For greater clarity, no election-specific or election-related articles, including letters to the editor and president's message, are to be included in *Engineering Dimensions* during the voting period. Notwithstanding the forgoing, *Engineering Dimensions* may contain an article on why voting is important.
  20. Chapters may not endorse candidates, nor expressly *not* endorse candidates, in print, on their websites or through their list servers, or at their membership meetings or activities, during the voting period. Where material does not comply with these procedures, the chief elections officer will cause the offending material to be removed if agreement cannot be reached with the chapter within the time available.
  21. Candidates may attend chapter annual general meetings, present their material and network during the informal portion of the meeting, provided they have obtained the prior consent of the chapter executive. If a chapter executive provides or withholds consent, it must provide or withhold consent to all candidates equally and fairly.

22. While not prohibited, mass mailings by candidates (either by post or electronic means) for campaign purposes, other than the email blasts that are sent by PEO on behalf of the candidates, will not be condoned by PEO.
23. The Central Election and Search Committee is authorized to interpret the candidate guidelines and procedures and to rule on questions and concerns of the candidates on matters concerning the election process.
24. These election and publicity procedures form part of the voting procedures.

## SCHEDULE A: 2015 ELECTION PUBLICITY PROCEDURES

### SPECIFICATIONS FOR CANDIDATE MATERIALS

<b>Publication format (in <i>Engineering Dimensions</i> or PEO website)</b>	<p>All material for publication in <i>Engineering Dimensions</i> must fit into the template dimensions: 6.531 inches wide and 4.125 inches in height.</p> <p>All material for publication must be submitted as a PDF document with images in place for reference, and as a formatted Word file, or in a Word-compatible file, showing where photographs are to be placed, accompanied by a hard copy of electronic files.</p> <p>Candidates shall not use the PEO logo in their election material.</p> <p>Candidate material may contain personal endorsements provided there is a clear disclaimer indicating that the endorsements are personal and do not reflect or represent the endorsement of PEO council, a PEO chapter or committee, or any organization with which an individual providing an endorsement is affiliated.</p> <p>The publications staff needs both a PDF file and a Word file of candidate material, as well as hard copies of both these files. This allows them to know how candidates intend their material to look. If there are no difficulties with the material, they will simply work with the PDF file. The Word file is required in case something isn't correct with the submission (just a bit off on the measurement, for example), as it will enable publications staff to fix the problem. Hard copies of both files are required because files can be, and sometimes are, corrupted in translation from one format to another (for example, when they are "dropped" into the InDesign page layout template).</p>
<b>Photographs</b>	<p>Photographs must be at least 5" x 7" in size if submitted in hard copy form so that they are suitable for scanning ("snapshots" or passport photographs are not suitable).</p> <p>If submitted in digital form, they must be JPEG-format files of at least 300 KB but no more than 2MB.</p> <p>Candidates can submit a digital photo at the specifications noted, or hard copy as noted and, preferably, both. In case the digital file is corrupted or not saved at a sufficiently high resolution, publications staff can rescan the photo (hard copy) to ensure it prints correctly, as indicated on the PDF.</p>
<b>PEO website</b>	<p>Candidates may also utilize space on PEO's website by submitting a Word or Word-compatible file of no more than 1000 words, and no more than three, non-animated graphics in JPEG or GIF format. Graphics may not contain embedded material.</p> <p>Candidates may post additional material on their own websites, to which a link will be provided from PEO's website. URLs for candidates' websites must be active by December 10, 2014.</p> <p>Candidates may include links to PEO publications but <i>not</i> a URL link to a third party in their material that is to be posted on PEO's website. Links to PEO publications are not considered to be to a third party. For clarity, the only URL link that may be included in a candidate's material on PEO's website is the URL to the candidate's own website.</p>
<b>Deadline for <i>Engineering Dimensions</i> and website submissions</b>	<p>Candidates' material for publication in <i>Engineering Dimensions</i> and on PEO's website must be forwarded to the chief elections officer at <a href="mailto:chiefelectionsofficer@peo.on.ca">chiefelectionsofficer@peo.on.ca</a> by December 11, 2014 at 4:00 p.m.</p>
<b>Eblast material</b>	<p>Candidates are permitted a maximum of 300 words for email messages. Materials are to be provided in text format only; graphics are not permitted. For clarity, a "graphic" is an image that is either drawn or captured by a camera. If HTML format is to be used for email messages, special design and graphic coordination are the candidate's responsibility.</p>
<b>Deadline eblasts to members</b>	<p>Candidates' material for eblasts to members must be forwarded to the chief elections officer at <a href="mailto:chiefelectionsofficer@peo.on.ca">chiefelectionsofficer@peo.on.ca</a>:</p> <p>By January 8—for eblast on January 15  By January 22—for eblast on January 29  By February 5—for eblast on February 12</p>
<b>Help</b>	<p>Candidates should contact the chief elections officer (<a href="mailto:chiefelectionsofficer@peo.on.ca">chiefelectionsofficer@peo.on.ca</a>) if they have questions about requirements for publicity materials.</p>



## MINUTES OF THE 92<sup>ND</sup> ANNUAL BUSINESS MEETING

SATURDAY, APRIL 26, 2014

CHAIR: ANNETTE BERGERON,  
P.ENG., MBA, FEC

THE 92<sup>ND</sup> ANNUAL GENERAL MEETING of Professional Engineers Ontario was held at the Fallsview Casino Resort, 6380 Fallsview Blvd., Niagara Falls, Ontario, on Saturday, April 26, 2014.

The President reported that PEO was web-casting its 2014 business meeting. She noted the positive response to the inaugural webcast of the Annual General Meeting in 2013 and that online coverage has been continued to increase the accessibility of PEO information to more members, no matter where they are located.

The President thanked the participants and attendees of Friday's Penta Forum, and said she hoped everyone found the session as informative and worthwhile as she had. She noted that in addition to the forum, the 2014 Order of Honour gala held the previous evening paid tribute to 10 exceptional professional engineers, each of whom had made significant lifetime contributions to the engineering profession in Ontario. She again recognized the honourees as well as the Sterling Award recipient, for their outstanding and dedicated commitment to the profession.

She also acknowledged the AGM Gold Sponsor, The Personal, and thanked the company for its continued support of the engineering profession.

The President informed the meeting that the 493<sup>rd</sup> meeting of PEO Council would be held

following the business meeting and luncheon and that all were welcome to attend.

### CALL TO ORDER

The President advised that, since proper notice for the meeting had been published in *Engineering Dimensions* as provided for under section 20(i) of By-Law No. 1, and a quorum was present, the meeting was officially called to order.

### INTRODUCTION OF COUNCIL

As the first order of business, the President introduced the members of the 2013-2014 PEO Council.

The Executive Committee members: Denis Dixon, P.Eng., FEC, Past President; David Adams, P.Eng., MBA, FEC, President-elect; Thomas Chong, P.Eng., FEC, Vice President (elected); Sandra Ausma, PhD, P.Eng., Vice President (appointed); and Councillors Ishwar Bhatia, P.Eng., Michael Wesa, P.Eng., Rebecca Huang, LLB, and herself.

The remaining members of Council: Councillors-at-Large Bob Dony, P.Eng., Roydon Fraser, PhD, P.Eng., and Roger Jones, P.Eng.; Regional Councillors Sandra Ausma and Michael Wesa (Northern Region), David Brown, P.Eng., BDS, C.E.T., and Chris Taylor, P.Eng. (Eastern Region), Denis Carlos, P.Eng., FEC, and Changiz Sadr, P.Eng., FEC (East Central Region), Len King, P.Eng., and Ewald Kuczera, P.Eng. (Western Region), Danny Chui, P.Eng., FEC, and Rob Willson, P.Eng. (West Central Region); Lieutenant Governor-in-Council Appointees: Ishwar Bhatia, Santosh Gupta, PhD, P.Eng., FEC, Richard Hilton, P.Eng., Rebecca Huang, Bill Kossta, Mary Long-Irwin, Sharon Reid, C.Tech., Chris Roney, P.Eng., BDS, FEC, Rakesh Shreewastav, P.Eng., FEC, Marilyn Spink, P.Eng., and Martha Stauch, MEd.

PEO's directors to Engineers Canada for 2013-2014: Diane Freeman, P.Eng., FEC, Catherine Karakatsanis, P.Eng., FEC, Phil Maka, P.Eng., FEC, Chris Roney and Rakesh Shreewastav.

### ORDER OF BUSINESS

President Bergeron welcomed the special guests attending the meeting and introduced representatives from provincial and national engineering associations from across the country:

- Guy Legault, MBA, FCGA, FCPA, CAE, Vice President, Business Services, and Kathryn Sutherland, P.Eng., LLB, FEC, Vice President, Regulatory Affairs, Engineers Canada;
- Andrew Loken, P.Eng., FEC, President, and Bob McDonald, P.Eng., LLB, FEC, Director of Membership and Legal Services, Association of Professional Engineers and Geoscientists of Saskatchewan; and
- Isabelle Tremblay, ing., Vice President of Finance and Treasurer, Ordre des ingénieurs du Québec.

She also welcomed a representative of one of PEO's partners in the engineering community in Ontario:

- Paul Acchione, P.Eng., President and Chair, and acting CEO of the Ontario Society of Professional Engineers.

President Bergeron then reviewed the order of business for the meeting as outlined in section 22 of By-Law No. 1 and in the agenda distributed at the meeting.



## IN MEMORIAM

The President asked all present to stand for a moment of silence in remembrance of those PEO members who had passed away in 2013.

## ADOPTION OF MINUTES

President Bergeron referred members to the minutes of the 2013 Annual General Meeting, which had been published in the November/December 2013 issue of *Engineering Dimensions*. The minutes were also distributed at the meeting.

It was moved by Thomas Chong, seconded by Richard Chmura, P.Eng., that the minutes of the 2013 Annual General Meeting, as published in the November/December 2013 issue of *Engineering Dimensions* and as distributed at the meeting, be adopted as amended.

Motion carried

## BUSINESS ARISING FROM THE MINUTES

The President reviewed the actions taken on the seven submissions made by members at the 2013 Annual General Meeting (AGM).

The first submission at the 2013 AGM requested that President-elect Adams be required to pay outstanding court costs before representing PEO and that he refrain from any discussion of the judicial review subject matter at any PEO function during his full term of office.

This was moved by Keith Loucks, P.Eng., and seconded by Tom Kurtz, P.Eng.

The President was pleased to be able to report that this matter had since been settled to the mutual satisfaction of all parties.

She also reported that as per the minutes of the settlement, there could be no further comment by anyone involved, including PEO Council and staff.

The second submission at the 2013 AGM was moved by Cliff Knox, P.Eng., and seconded by Chantal Chiddle, P.Eng.

The submission called on Council to consider a policy that would prevent any member from serving on PEO Council or in a fiduciary capacity on any PEO committee or chapter board while the member has an outstanding payment owing to PEO that has not otherwise been excused by the Registrar or by direction from an Ontario court.

The President noted that section 22(1) of the *Professional Engineers Act* allows the Registrar to cancel a licence or Certificate of Authorization for non-payment of any fee prescribed by the regulations or the bylaws after giving the licence or certificate holder at least two months' notice of the default and intention to cancel the licence.

She also noted that licence holders are given several reminders (both paper and electronic) both before and after the due date to remedy the situation.

If a licence or certificate holder fails to make payment by the date specified in the last reminder, the Registrar sends a notice of cancellation, advising that the licence or certificate has lapsed.

The effective date of a lapsed licence or certificate is the date of the Registrar's letter.

Until such time as a notice of cancellation is sent to a licence holder, the President continued, that licence holder continues to be a member of the association and is entitled to participate in any position to which the licence holder has been elected or appointed.

As well, the Discipline Committee has the authority, under section 28(4) of the *Professional Engineers Act*, to:

- revoke a licence of a member;
- suspend a licence for a maximum of 24 months;
- impose fines to be paid to the association; and
- fix and impose costs to be paid by a member to the association.

Again, until a penalty of revocation or suspension has been imposed by the Discipline Committee, a PEO licence holder continues to be a member of the association, she said.

The President noted that neither the act nor the regulations include a definition of a member in good standing.

Consequently, as recommended, and by consensus, Council agreed to direct the Legislation Committee to use PEO's regulation-making powers and processes to amend Regulation 941 to define "member in good standing" for the purposes of clarifying when a member is, or is not, entitled to the rights and privileges of membership, including those adhering to a position to which a member has been elected or appointed.

The third submission at the 2013 AGM was moved by Cliff Knox and seconded by Chantal Chiddle.

The submission requested that the 2013 PEO election results for the office of President-elect be reconsidered, pending a review of the eligibility of all candidates to serve free of any conflicts or bias.

The President noted that the results of the elections are certified by the Official Elections Agent and verified by the Returning Officers, and that this motion partially arose because the Official Elections Agent counted, but did not report in the final report, the votes cast for one candidate for the East Central Regional Councillor position who withdrew his candidacy after voting commenced. However, the votes cast for the positions of President-elect, Vice President and Councillor-at-Large by those who voted for this candidate were both counted and included in the final report.

To eliminate any such potential confusion, prior to the 2014 election, Council approved a recommendation of the Central Election and Search Committee and directed the Official Elections Agent to include in the final report a tally of all votes cast, including any votes cast for candidates who might have withdrawn from the election after voting had begun.

## [ AGM MINUTES ]

The fourth submission at the 2013 AGM was moved by Ray Linseman, P.Eng., and seconded by Graham Houze, P.Eng.

The submission requested PEO Council to take the necessary steps to amend Regulation 941 to define the terms “engineering principles” and “the application of engineering principles,” as well as any other terms deemed necessary to define the practice of professional engineering.

The President reported that, in 2010, PEO Council adopted the national definition of professional engineering and revised the definition in the *Professional Engineers Act* accordingly.

Adopting the national definition of professional engineering was deemed essential for harmonizing licence and registration requirements across the country.

Since the national definition does not define the term “engineering principles,” Council determined, by consensus, that defining the term for Ontario would not be productive in harmonizing licence and registration requirements nationally, so PEO took no action on this submission.

The fifth submission at the 2013 AGM was also moved by Ray Linseman and seconded by Graham Houze.

This was the first of three submissions that were referred directly to Council by consensus of the meeting.

The submission requested that PEO Council make the necessary resources available to enable email distribution lists on chapter email address contact lists to be updated by IT staff on a weekly basis, or when necessary, and allow chapters to use this as a means of sending email bulletins, chapter newsletters or other PEO-related business to their members, providing members’ privacy rights are respected. By consensus, Council agreed it wasn’t necessary for PEO to take any action directly on this submission as a new distribution system for chapters is already being developed.

Further, to ensure members’ privacy is protected and to minimize the risk of accidental or inappropriate release of their personal information, PEO must continue to control members’ contact information.

The sixth submission at the 2013 AGM was moved, again, by Ray Linseman and seconded by Graham Houze.

This submission requested Council to approve the creation of a confidential contact information list for the use of PEO staff, chapter chairs and, perhaps, the chapter officer positions of vice chair, secretary, and treasurer to assist in inter-chapter communications on PEO matters.

The President advised that to implement such a system, PEO would have to obtain the consent of each individual whose contact information was to be included on the list prior to distributing the list.

If the member did not consent, the information could not be included on the list. Because of this administrative burden, and because the privacy of members is paramount, Council agreed by consensus that PEO would take no further action on this submission.

The seventh and final submission at the 2013 AGM was moved by Ray Linseman and seconded by Graham Houze.

The submission requested that additional, generic email addresses for each chapter be created, in addition to the existing general chapter email addresses.

The President reported that while there were no technical issues preventing implementation of this request, there was an administrative one, noting that there are eight chapter executive positions and 36 chapters, which means 288 email addresses would require constant monitoring and would need to be updated on an annual basis.

This would significantly increase the possibility of messages being misdirected or personal email addresses being inadvertently identified as a greater number of chapter executive members would be involved in the process if messages are forwarded.

The President also noted that while there were no privacy concerns around creating additional email addresses for chapter executive positions for the purpose of receiving emails, the practice of identifying senders, providing a means of contacting senders and blind-copying multiple recipients would need to be implemented or maintained.

Accordingly, Council agreed by consensus that no action on this issue was required.

### FINANCIAL REPORT

The President referred members to the auditors’ report and the financial statements, which were published to PEO’s website in early April and distributed as part of the registration package for the meeting. These statements would also be published in the May/June 2014 issue of *Engineering Dimensions*.

She also referred to the booklet entitled *Questions and Answers on PEO Operations* included in the registration package. This booklet was compiled to address common questions on all aspects of PEO’s operations. She advised that the booklet had been published on the PEO website and that chapters could obtain additional copies by contacting their regional councillors.

### RECEIPT OF AUDITED FINANCIAL STATEMENTS

The President then asked for questions from the floor regarding the financial statements. There were none.

It was moved by Santosh Gupta, seconded by Michael Wesa that the 2013 audited financial statements as presented be received.

Motion carried

## APPOINTMENT OF AUDITORS

President Bergeron stated that it is necessary for members to appoint auditors for the ensuing year. She advised that the Audit Committee was recommending that the firm of Deloitte LLP be reappointed.

It was moved by Roger Jones, seconded by Ewald Kuczera that the firm of Deloitte LLP be appointed auditors of the association for the 2014 financial year.

Motion carried

## GREETINGS FROM ENGINEERS CANADA

Since Engineers Canada Past President Catherine Karakatsanis was unable to attend the meeting, Chris Roney was asked to speak on behalf of Engineers Canada.

Roney reported that he was excited to have the opportunity to bring greetings from Engineers Canada. He explained that Engineers Canada is the national body that is made up of the 12 provincial and territorial engineering regulators. The Engineers Canada board of directors consists of engineers who are appointed by each of the provincial regulators for a total of 21 board members, of whom PEO, by virtue of size, has five. He noted that PEO has over 88,000 professional engineers and engineering interns and nationwide there are over 260,000 members of the engineering profession.

Roney went on to discuss globalization, which was identified as an issue at one of PEO's Council workshops, led by President Bergeron. He said this is one of the key issues that Council will have to grapple with; however, globalization in engineering is not just an issue for PEO, it is an issue for all engineers across the country. He noted that some may have attended a May 2011 globalization workshop hosted by Engineers Canada. Discussions from that workshop were studied and followed by the formation of three Engineers Canada subcommittees, with one focusing on the effect of globalization on regulation of the profession, another on the practice of professional engineering and the third on education. These subcommittees developed 30 recommendations and directions, which have now been put into an action plan that is being acted upon. Most interesting is that even though these three subcommittees studied globalization separately, they all shared one recommendation, which was that Engineers Canada actively promote the Canadian system of professional engineering licensure internationally. Roney noted that this is an example of what can be accomplished if everyone works together. Roney commented that everyone is facing the same challenges, threats and opportunities across the country and that, working together, goals can be achieved far better and more efficiently than by working individually.

Roney then discussed the new Engineers Canada governance structure and the series of policies that had recently been adopted. The overarching policy governing Engineers Canada is that it exists to support the constituent associations through advancement of the profession and its self regulation in the public interest. He noted that Engineers Canada had recently been realigned into two divisions: Regulatory Affairs and Business Services. Kathryn Sutherland is the Vice President, Regulatory Affairs, and Guy Legault is Vice President, Business Services. Since both were at the meeting, Roney invited members to introduce themselves to them.

In conclusion, Roney invited members to follow Engineers Canada on Twitter, LinkedIn and Facebook and/or subscribe to their daily media report and weekly newsletter, or to visit their website. Roney also referred to the Question and Answer document in the delegate package, which

contains several pages about some of Engineers Canada's initiatives over the past year. Members were encouraged to speak to any of the Engineers Canada staff or directors at the meeting if they had any questions or comments. He then extended his thanks on behalf of Engineers Canada to the PEO executive and staff for their ongoing support and collaboration, as well as to President Bergeron for her hard work during the past year. He also extended best wishes to incoming President David Adams.

## UPDATE FROM THE ONTARIO SOCIETY OF PROFESSIONAL ENGINEERS

The President invited the Ontario Society of Professional Engineers (OSPE) to provide an update. Paul Acchione, President and Chair and acting CEO, thanked PEO for the opportunity to say a few words. Acchione advised that he and Past President and Chair Nadine Miller, P.Eng., had made an effort to try to work more closely with PEO since much more can be accomplished by working together than at cross purposes. He referred to OSPE's Chapter Outreach Program, which a number of PEO's chapters had taken advantage of for some technical seminars on various policy issues that OSPE is raising with the provincial government. He said that OSPE is, with PEO's help, running an enhanced "joint event pilot" with the Ottawa Chapter. Since the chapter is paying for a portion of the joint event, OSPE is, in return, offering a discount in its membership fees for Ottawa Chapter members. If successful, OSPE, with PEO Council's support, would like to extend this pilot to some of the other chapters.

Acchione noted the success of a joint OSPE/PEO program launched nine months previously on the Political Action Network (PAN) and Government Liaison Program (GLP), which allows for joint OSPE/PEO representation when meeting with members of provincial parliament.

He also noted that OSPE is doing some labour market analysis, working with Engineers Canada, and data would be published shortly.

## QUESTIONS FROM MEMBERS

The President reported that there were no member submissions received by the deadline of 4:00 p.m. on Friday, April 11, 2014. This allowed for some time in the schedule for questions from members to the current Council.

Ravi Gupta, P.Eng., stated that there was a matter of emerging importance to PEO regard-

## [ AGM MINUTES ]

ing licensing and registration, involving some disconnects between what Engineers Canada is doing and what PEO has a stand on. The issue relates to credential recognition for people applying for immigration, particularly in the engineering profession. Third parties are beginning to emerge to assess the credentials of such foreign applicants. He noted that there are Council members on the Academic Requirements Committee and the Experience Requirements Committee and asked if someone could provide a status report. The Admission Advisory Board is another case in point, having been created by Engineers Canada without any consultation from PEO.

President Bergeron agreed that this is an extremely important issue and said she was glad that this was being raised. She noted that she had been elected to the Engineers Canada Board as of May 2014 and she would bring this forward. She then asked Chris Roney, Engineers Canada director, to respond.

Roney stated he believed the program referred to was an initiative by the federal government through Citizenship and Immigration Canada (CIC), in which department staff review the qualifications of applicants, granting points for admission. He said that approximately 20 months ago, CIC put out a Request for Proposal for outside agencies to assess the credentials of foreign-trained professionals, including engineers, physicians and pharmacists. There are a number of outside agencies that are now doing those assessments, including the review of engineering credentials. Engineers Canada is not one of these agencies. PEO's concern, as a provincial regulator, he said, is the message that it gives to the foreign-trained professionals going through this process, whose credentials are recognized by CIC but may not be accepted by PEO, which puts PEO in a bad situation because it appears PEO is re-assessing credentials that have already been assessed. As a result of this situation, Roney continued, engineers are receiving mixed messages and the system seems overly bureaucratic. This is something that needs to be dealt with nationally because this is a national issue. The question is whether PEO wants to become involved with this process, because the process is already happening and credentials are being assessed by a non-engineering, non-regulated body.

Roney said the other issue brought forward relates to standards for licensure and maintaining PEO's high academic and experience requirements. There are 12 different regulators, he noted, with each responsible in their own province and territory for assessing the credentials and determining whether someone meets the standard for acceptance in the profession. The federal government, through an agreement on internal trade, has directed that someone licensed in one province can move anywhere else in Canada and be allowed to practise. Without this harmonization, there is a concern that there will be different levels of qualifications across the country. Engineers Canada is calling for consistency in national standards through the harmonization of qualifications to prevent any professional from seeking a licence from a province with lower standards and then practising anywhere in Canada.

Peter DeVita, P.Eng., asked, rhetorically, why the federal government would introduce this again since the solution is already there, in that licensing bodies across Canada have set up websites so that anybody in the world can apply to PEO, for example, to become an engineer and have their academics assessed by PEO directly. There is no guess work as to whether those credentials will be acceptable to PEO, since PEO will advise applicants whether their credentials are acceptable and, if not, they can write the necessary exams in their own country, which PEO will arrange.

Cliff Knox noted the improved communications on Council proceedings, mentioning that full and complete agenda packages are now available and there is improved openness and communications to chapters and other interested volunteers in the interest of progressive, transparent communications. He asked if it were possible, additionally, to post the disposition of motions as they become available so that volunteers, stakeholders and members are better apprised of business and motions approved by Council at the earliest possible time. President Bergeron advised that this will be investigated.

Nick Monsour, P.Eng., referred to the lack of progress on the industrial exception. He asked why Council was unable to convince the government that the industrial exception should be changed, calling it an important subject, since safety and health are significant. He suggested councillors speak to Premier Kathleen Wynne at events about this very important issue.

President Bergeron thanked Monsour for his comments, agreeing that this is an extremely important issue that has been front and centre during her year as President. She said she attends many political events and raises this issue at every opportunity. She assured members that Council continues to work on this and that President-elect Adams will continue to advocate for and support the repeal of the industrial exception.

### PRESENTATION TO OUTGOING COUNCILLORS

President Bergeron congratulated members of the 2013-2014 Council, who had worked diligently in serving the profession.

In recognition of their service, she presented certificates, name badges and desk plaques to retiring members of Council: Past President Denis Dixon; Vice President (appointed) and Northern Region Councillor Sandra Ausma; East Central Region Councillor Denis Carlos; and Eastern Region Councillor Chris Taylor. She also recognized two Lieutenant Governor-in-Council appointees who had recently retired from Council and were unable to attend the meeting: Tarsem Lal Sharma, PhD, P.Eng., and James Lee, PhD, P.Eng.

## REMARKS FROM REGISTRAR McDONALD

Registrar Gerard McDonald, P.Eng., thanked President Bergeron, President-elect Adams and Past President Dixon, as well as Council, for the trust they have placed in him to run PEO. He advised that during his first four months, he had taken the time to sit down with each and every staff member to discuss the organization, and reported that PEO has a truly dedicated, committed staff. He said he wants to ensure, with the help of Council, that PEO remains relevant, robust and responsive, and said he welcomes feedback from the membership on ways to make it better.

## REMARKS FROM PRESIDENT BERGERON

President Bergeron thanked members of the 2013-2014 Council for their support during her term and thanked licence holders for bestowing on her the privilege of leading the profession. She noted that her tenure as PEO President came with an unexpected challenge: a search for a new Registrar. She advised that she was, nevertheless, happy to participate in the process since this, in her opinion, is one of the most important duties of Council or of any board of governance. Hiring the right person to lead PEO sets the tone for the association for years to come, she said, and has a lasting impact on PEO's success in carrying out its mandate. President Bergeron stated that Gerard McDonald brings to the association a proven record of high-level regulation development and expertise, along with commitment to focus PEO on its core mandate.

President Bergeron indicated that in her election platform in 2012 she had promised a clear focus on regulatory activities and that she was proud of Council's focus on regulation during her term, given the need to deal with some critical regulatory issues. She stated that when she assumed the presidency in April 2013, PEO was at the height of its efforts to ensure proclamation of the repeal of section 12(3)(a) of the *Professional Engineers Act*, an exception that, regrettably, allows certain acts of engineering in a manufacturing setting to be performed by unlicensed employees. Although proclamation of this important legislation was ultimately postponed, Bergeron noted that it remains on the government books until 2020. Undeterred, she said, PEO has continued to press for its implementation. President Bergeron reported she had met with MPPs, industry stakeholders and the media to raise awareness of the repeal and summon the facts. She stated that this issue is one of protecting safety in workplace environments and she remains concerned every time she reads about another manufacturing accident where life has been lost or a worker has been harmed. Therefore, she said, PEO's resolve to see the repeal proclaimed remains steadfast.

Bergeron said she was grateful as President to have had the expertise and support of five structural engineers on Council and staff who, as a task force, addressed the issues and questions presented to PEO by the Elliot Lake Commission of Inquiry during its examination into the partial collapse of the roof-top parking deck of the Algo Centre Mall. She stated that she is most proud of the association's contributions to the commission, which included participation in expert roundtable sessions and recommendations intended to strengthen PEO's regulation of engineering practice to help prevent similar tragedies from occurring again. President Bergeron said she looks forward to the commission's final report in October 2014 and anticipates there may be additional regulatory work ahead for PEO as a result. In anticipation of that report, and knowing what the inquiry has already asked PEO, President Bergeron reported that Council recently requested terms of reference for a task force to explore what PEO currently

has in place for licence holder professional development and whether it is sufficient to assure quality, competence and, ultimately, public safety. Chapter leaders had already started discussing continuing professional development at the April 25, 2014 Penta Forum.

During the 2013-2014 Council term, President Bergeron advised, she remained true to her promise to carry on Past President Dixon's work with OSPE by increasing the frequency of the Joint Relations Committee meetings to almost one a month to leverage each organization's distinct roles in the profession. Since there are two engineering bodies in Ontario, she noted, PEO has the luxury of focusing on regulation, and OSPE on advocacy and member services. President Bergeron noted that the distinction is obviously an important one but often gets overlooked, despite best efforts to serve the profession. Continuous dialogue helps to provide clarity for the leadership groups of both organizations.

President Bergeron reported that while significant work had been accomplished during the year to improve the governance of the profession, much remains to be done. A presidential term of one year is short by governance standards. Fortunately, she said, PEO's new Registrar will be formulating a forward-looking corporate strategic plan for Council's consideration that should assist in keeping PEO focused on its mandate. President Bergeron indicated that Registrar McDonald had presented the start of the plan to chapter leaders at the Penta Forum for their important feedback and that plans were in place to take the feedback forward to committee chairs first, and then to Council in June.

President Bergeron thanked all candidates who had put their names forward to serve the profession, noting that PEO made a concerted effort to engage licence holders in the recent election and she hoped they had noticed the improved communications. She added that all those who placed their names on the ballot as candidates deserve praise. In closing, President Bergeron stated that she looks forward to welcoming the new Council and encouraged all licence holders to participate in the governance of the engineering profession.

## INSTALLATION OF NEW PRESIDENT

Past President Bergeron administered the oath of office to David Adams as President for the 2014-2015 term and presented him with the gavel of office.

## INTRODUCTION OF INCOMING MEMBERS OF COUNCIL

President Adams then introduced the newly elected members of the 2014-2015 Council: Past President Annette Bergeron; President-elect Thomas Chong; Vice President George Comrie, P.Eng., FEC; Eastern Region Councillor Charles M. Kidd, P.Eng.; East Central Region Councillor Nicholas Colucci, P.Eng., MBA, FEC, and Northern Region Councillor Serge Robert, P.Eng.

## CLOSING REMARKS BY PRESIDENT ADAMS

President Adams advised that he had recently been invited as a guest speaker to the Georgian Bay Chapter annual general meeting to address and discuss important issues facing the engineering profession in the year ahead. The engineers in attendance represented several industries, including a large contingent of nuclear engineers from Bruce Power. President Adams advised that many meaningful questions were raised by the members as he and they sought answers together, to determine the best way forward, on at least five main topics:

1. The requirement for enhanced legislation, through changes in the *Professional Engineers Act* and the Ontario Building Code, to more clearly define both the responsibility and authority of the individual P.Eng. and that of PEO itself, in the protection of the public  
President Adams noted this requirement was clearly enunciated during discussion of the Elliot Lake mall roof collapse, which killed two people.
2. The transfer, or otherwise, of current PEO advocacy work to OSPE, excluding portions of the PEO Government Liaison Program regarding regulation, which has always been the prerogative of PEO.
3. Planned assistance by PEO, in setting up and maintaining competency records, recorded by members in "practice profiles."
4. The requirement for a greater number of and more up-to-date practice standards and guidelines.

5. The need to maintain a vibrant and relevant profession, based upon a P.Eng. with up-to-date technical content, augmented by emerging disciplines.

President Adams then reported on the recommended actions by the Georgian Bay Chapter for the five listed topics:

1. It was strongly expressed at the Georgian Bay Chapter annual general meeting that PEO should lobby the government to strengthen the individual engineer's authority and responsibility under the *Professional Engineers Act* and building codes, adopting, among other issues, standards and regulations for structural engineering practice and independent construction review by a P.Eng.

The role and responsibility of PEO as the regulatory association was also queried in the discussion, as duties and status are far from clear in the minds of the participants.

Specifically, with respect to the Elliot Lake mall roof collapse, it was asked why the PEO Council-approved motion recommending legislation changes similar to those enacted in British Columbia after its mall collapse had not been adopted. The PEO Council motion had accepted the BC "Engineer of Record" solution for structural design and construction review, which is still in use by engineers practising in BC.

It is also of interest, he noted, that PEO Council deliberations on the subject took place roughly nine months before the actual Elliot Lake mall roof collapse. This unanimously approved PEO Council motion was conveyed to the Bélanger Commission of Inquiry for its consideration. Commission findings are to be published in October of this year.

2. President Adams stated that with respect to advocacy, in general, the fact that the Ontario government had decreed that PEO was to divest itself of member advocacy over 10 years ago was discussed by the chapter. The transfer of substantial start-up financing and personnel to OSPE had been done to try to accomplish this. It had been thought OSPE would grow well beyond the present 10,000 member range and would be in a position to advocate for the whole 80,000 P.Eng. membership. Because this did not happen, PEO continued to provide limited support advocacy in some areas, with PEO staff sometimes duplicating OSPE efforts.

The President noted the annual cost to PEO of advocacy programs in 2013 was \$830,000 with \$976,000 budgeted for 2014, of which the regulatory GLP costs were only \$16,000 in 2013 and \$33,000 in the 2014 budget.

In addition to the joint PEO/OSPE Awards Gala, present PEO advocacy activities range from public policy debates, to education outreach, the Engineer-in-Residence program, National Engineering Month and the general MPP relationship portion of PEO's Government Liaison Program, which, increasingly, is participated in by PEO chapters, he said.

It was recommended at the Georgian Bay Chapter AGM that after providing this limited advocacy for over 10 years, PEO should decide whether to follow the government's intention of PEO divestiture of other than regulatory matters, or put in place a funding formula that would enable transfer of the administration of these lingering advocacy activities to OSPE.

3. There was general belief among the Georgian Bay Chapter AGM participants, the President said, that it is the individual engineer's responsibility to maintain his or her competency. Further, it was thought each member should design their own training program in conjunction with the needs of their employer, by delineating the continuing education they require to adequately protect the public from engineering failures in their own practice.

In the opinion of those present at the Georgian Bay Chapter AGM, achieving individual continuing competence would be a very positive route to member buy-in and in PEO's ability to assure government that P.Engs are individually continuing to update their proficiency in protecting the public.

President Adams reported that while other routes to continuing education used by PEO's sister associations included a wide range of technical and business subjects, often sought after by employers, it was believed such subjects should be studied by PEO members on their own time and dollar, with the proviso that the additional learning be recorded in their competency profile kept by PEO.

The Georgian Bay Chapter thinking on the subject of recording continuing competency and education programs is that it would apply only to registered, practising engineers, including engineers in management and teaching. This process would, no doubt, leave in its wake a "right to title" group of engineers who should be encouraged to remain members of PEO, largely because these non-practising engineers are often the ones who offer useful advice on the direction the profession and association should be taking, from a business perspective, he said.

Should any of the "right to title" group decide to enter practice at a later date, particularly if work became available, or they were to move to another province, they would inform PEO accordingly, and if they were just beginning engineering for the first time, they might want to refresh themselves with the EIT program, and be registered in

PEO's continuing competency program with their own personally formulated practice profile.

President Adams stated that a task force to plan continuing professional development was appointed at the February Council meeting, which occurred after the Georgian Bay Chapter discussion took place.

He noted the other issues listed as numbers 4 and 5, concerning the adequacy of practice standards and guidelines and maintaining a vibrant engineering profession in Canada, are self evident and would require renewed effort from the committees and the work of PEO representatives on the Canadian Engineering Accreditation Board of Engineers Canada. He stated that while these forward-thinking ideas offered by the Georgian Bay Chapter encompassed the thinking of 30-odd dedicated members, he hoped similar chapter meetings would take place on the subject across the province to enable general conclusions and assist the task force in the development of a meaningful continuing education proposal.

President Adams stated that in regard to the establishment of these many programs, it would appear PEO would benefit immensely from a written and monitored strategic plan, to coordinate efforts and expenditures. In fact, without an approved, monitored plan, it is almost impossible for Council to exercise sound governance of the revenues and activities of the association without interfering with operational matters, he said. President Adams noted that both he and Registrar McDonald concur on this issue, as taught in business schools and practised by the best run boards in Canada and the US.

At the June 2014 Council Retreat and in the ensuing year, the members of Council, Registrar McDonald and himself would focus on the preparation and implementation of a strategic plan, evaluating what programs fit into PEO's strategic direction, he said.

President Adams thanked everyone for their continued support for him to serve the profession and to help PEO grow stronger. He said he welcomes feedback on his address or on other important initiatives for the coming year that will satisfy a new or enhanced strategic direction.

[Secretariat's note: President Adams' full address was published in the May/June 2014 issue of *Engineering Dimensions*.]

## CONCLUSION

President Adams then declared the 92nd Annual General Meeting of the Association of Professional Engineers of Ontario concluded. Σ

Gerard McDonald, P.Eng.  
Registrar

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AGM—AGM minutes  
AP—Awards Program  
ED—Editor's Note  
F—Features  
FO—Formation  
FS—Financial statements  
G—Gazette  
IC—In Council  
IM—In Memoriam  
L—Letters  
N—News  
NEM—National Engineering Month  
OH—Order of Honour  
PE—Policy Engagement  
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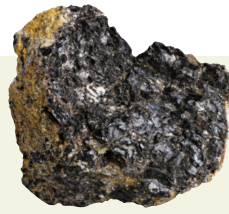
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## MADE IN CANADA

Re: "Ring of Fire puts spotlight on northern Ontario's mining industry," *Engineering Dimensions*, September/October 2014, p. 39.

While the emphasis of this article was, of course, on the mining and processing of chromite ore from the Ring of Fire, it made me think about other opportunities that could, or should, be created beyond the extraction and exportation of the raw or semi-raw material.

Chromite is a chromium-containing ore which, after mining, is converted into a mixture of iron and chromium known as ferrochrome. Ferrochrome is melted with additional iron to make iron-chromium alloys. The resulting alloys become "stainless" steels (i.e. they will not rust during normal atmospheric exposure) when the chromium content reaches about 12 to 13 per cent Cr. Several stainless steels of industrial importance contain 18 per cent or more of chromium, along with other alloying elements like nickel (also produced in Ontario).



Development of the Ring of Fire would provide employment for some engineering disciplines. However, it is regrettable that there is no longer a large-scale Canadian melter of stainless steels and manufacturer of basic products (such as sheet, plate and bar) that could directly utilize the produced ferrochrome. Atlas Steel Co., which used to manufacture a range of stainless steel products, went out of business several years ago and now these basic products must be imported into Canada.

Perhaps the provincial and federal governments could help to re-establish stainless steel production to ensure that some of the chromite from the Ring of Fire gets to be transformed into "Made-in-Canada" ingots and products—thus providing good job opportunities and additional revenue.  
Frank N. Smith, P.Eng., Kingston, Ontario

## SHARPENING THE PEA

In Ontario, and most other provinces in Canada, you don't have to be a professional engineer (P.Eng.) to own and

operate a company, which you can, by law, call an "engineering company."

As things stand, your local corner variety store owner can call his or her store an "engineering company" if he or she: (a) fills out a form that indicates a licensed P.Eng. is an employee, (b) gets that P.Eng. to apply, in the company's name, for a Certificate of Authorization to offer engineering services to the public, and (c) though not strictly necessary, takes out errors and omissions insurance in that company's name.

Now, would you expect anyone but a licensed medical doctor to own a clinic? Or a lawyer to own a law firm? Or a dentist to own a dental clinic? Of course not! Yet due to what I consider to be a loophole in the *Professional Engineers Act*, any Tom, Dick or Harry can get a P.Eng. to fill out some forms, and he and his pals can then hang up a shingle.

I have had some experience interfacing with such firms, and most of it was negative in the extreme. My biggest gripe with them has been that, devoid of the requirement to follow the engineering Code of Ethics, they routinely cut corners, issuing drawings and specifications that are laughable in quality. They have devalued the status of bona fide engineering firms, all in the name of money.

Engineering a building's mechanical systems (as an example, in my industry) is a costly, time-consuming and labour-intensive process.

Post-tender, the engineers have to implement the project, starting with initial site meetings followed by monthly meetings and reportage of field inspections.

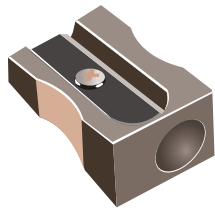
Without frequent inspections of the work-in-progress, there is no way to guarantee the workmanship is satisfactory, yet because of the constraints put upon them by the extremely low-fee structure many engineering companies now have to conduct their inspections on a "random sampling" basis.

The fly-by-night companies that have chiseled down engineering fee structures have made it difficult for the majors to carry out these crucial site inspections and make enough money to cover wages and overhead costs. As a result, the quality of some mechanical installations has deteriorated to the point where, as in the case of some condominium residences, insurance companies are becoming wary of issuing water damage coverage policies except with higher premiums and reduced coverage.

What we need here in Ontario is to make it mandatory that in order for a company to call itself an "engineering firm" that firm's ownership must rest with a P.Eng. or a partnership of professional engineers and NOT with someone who lacks the qualifications for licensure.

Only if this is made into law will companies owned by less competent, unscrupulous designers, whose ideas of professional ethics can best be described as Victorian, be closed.

The *Professional Engineers Act* needs to have its teeth sharpened!  
Michael McCartney, P.Eng., BDS  
Toronto, ON





## THE EFFECTS OF FLUORIDATION

This letter refers to the articles about water treatment and fluoridated drinking water (FDW) (“Engineers cited for role in environmental reporting enhancements,” p. 10) and PEO’s public policy advisory role (“Policy development still fertile ground for engineering input,” p. 17) in the July/August 2014 issue of *Engineering Dimensions*.

On April 29, 2014, Kathleen Thiessen, PhD, senior scientist at the Oak Ridge Center of Risk Analysis, swore an affidavit to the Peel Region council on its fluoridation program ([tinyurl.com/m6sn3db](http://tinyurl.com/m6sn3db), p. 20). Her assessment, based on 120+ international scientific references spanning the last 25 years (75 per cent published from 2000 to today), led her to conclude that FDW is:

- ineffective (topical application, not ingestion, is the main modality of tooth decay benefits);
- unsafe (17 different adverse health effects impacting human organs, cells, children’s brains, bones, teeth and blood arise from this toxic pollutant in our drinking water);
- ethically wrong (violates fundamental principle of doctors and dentists obtaining individual informed consent prior to and during medical treatment); and
- unnecessary and obsolete (better means exist to improve dental health at less cost).

From this we see that Ontario’s FDW policy is inherently flawed and failed. It hasn’t achieved its original goals of reduced tooth decay and a

maximum dental fluorosis incidence of 10 per cent among children. Nor has it prevented other significant, adverse health effects. Public health officials err greatly in defending FDW; namely, they confuse this drug’s fluoride concentration (mg/L or ppm) with the dosage (mg/L/kg body weight) and the resulting daily dose (mg/L consumed). Science shows excess dosage to be the real cause of FDW adverse health effects.

In figure 6 of her affidavit, Thiessen noted the average thresholds of toxic fluoride ranges from 0.005 mg/kg/day for impaired thyroid function to 0.02 mg/kg/day for moderate dental fluorosis, 0.05 mg/kg/day for severe dental fluorosis and 0.09 mg/kg/day for risk of bone fractures. For infants, the range of fluoride intake can vary from 0.06 mg/kg/day to 0.15 mg/kg/day versus 0.02 mg/kg/day to 0.05 mg/kg/day for children one to 10 years old. Both ranges exceed most of the eight toxic thresholds she shows for fluoride intakes.

Toxic levels of the fluoride vary greatly by age, stage, size, activities and underlying health conditions, such as diabetes and diet (i.e. sugar and salt content), of those consuming FDW or food and beverages prepared using it. Daily doses range from under a litre of water (e.g. nursing babies) to over 10 litres (e.g. outdoor construction workers, elite athletes). Overdoses and adverse health effects thus can vary greatly across the population.

Public health officials or water treatment plant engineers/technicians can control neither dosage nor dose. Simply, it cannot be regulated. Those “authorities” who advocate FDW basically damage the public’s general health and undermine their collective trust in public dental health care, thereby potentially reducing their trust in other public health measures.

For these reasons, I recommend PEO adopt the policy action plan outlined in my colleague Gerry Cooper’s letter also published in this issue (p. 73).

Chris Gupta, P.Eng., London, ON

## A BIGGER ISSUE

On May 26, 2014, a Health Canada (HC) letter in response to an *Access to Information Act* request for international or domestic scientific studies, especially any on double blind, random, controlled clinical trials or toxicological analyses on the efficacy and human safety of injecting hydrofluosilicic acid in Canadian drinking water, stated it had no such records. This is an amazing admission that “the emperor has no clothes”!

It suggests that HC has failed the Canadian public in its duty of care and due diligence in the conduct of its role in support of fluoridation. Its policy advice to ministers of the Crown, be they

federal, provincial or territorial, seems to be built on a foundation of sand. HC has seemingly been content to serve status quo seekers in other public health organizations rather than to serve the public good by seeking out the truth that recent, science-based research and fact-finding evidence has achieved. HC is in denial over the flaws and follies of fluoridation. It is dogmatic and close-minded on this issue. It strives to preserve and protect the status quo. Other levels of government have conse-



quently been misled and poorly advised. A return to reason is urgently needed.

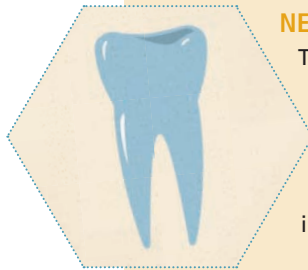
Essentially, what was purportedly a dental health public policy has instead become a wastewater management policy issue. Some 99 per cent of fluoridated drinking water is now used for purposes other than dental care and eventually finds its way to wastewater treatment facilities. Fluoride is not removed from the waste streams. Instead, it is released to reservoirs, ponds, rivers, lakes or oceans rather than being treated via reverse osmosis or other technologies. Thus, this toxic pollutant is injected into the environment to play further havoc with the health of humans and other living specimens, be they land-based or marine life. This is illegal per the *Ontario Safe Drinking Water Act, 2002*.

In Israel, Minister of Health Yael German recently ended fluoridation despite the vocal and vociferous attacks of fluoridation promoters. This decision is a model for the public health community in both Israel and other communities around the world. It is sound, based on the current scientific research literature and the need to protect the health of citizens from the unnecessary ingestion of fluoride. Fluoridation proponents appear to be unwilling to defend their views in open, public debate. Perhaps this is due to current science not supporting their claims that ingesting fluoride is harmless or that it greatly lowers the incidence of tooth decay.

The foregoing constitutes further justification of the call for PEO action, to assume a lead role in bringing about a timely end to the current fluoridation policy and related practices in Ontario.

For your reference, the Health Canada document mentioned above can be found here: [www.wedeservesafewater.com/forum/uploaded/HealthCanadaFOIPJune2014snip.pdf](http://www.wedeservesafewater.com/forum/uploaded/HealthCanadaFOIPJune2014snip.pdf).

A brief on the news from Israel can be found here: [www.bmj.com/content/349/bmj.g5240.full?ct=ct](http://www.bmj.com/content/349/bmj.g5240.full?ct=ct). Vladimir Gagachev, P.Eng., Mississauga, ON



## NEED FOR PEO ACTION PLAN

This letter responds to the July/August 2014 issue of *Engineering Dimensions*, which deals with PEO's policy advisory role ("Policy development still fertile ground for engineering input," p. 17).

On August 15, 2014, Hardy Limeback, PhD, DDS, former head of preventive dentistry, University of Toronto, urged Israel to ban fluoridation. It has now done so. His reasoning is based on his personal research of fluoridation and his mastery of international research studies. Importantly, his work shows ingested fluoride in tooth dentin causes teeth to become more brittle and prone to fracturing. He has treated many patients for dental fluorosis over 30 years, requiring uninsurable expensive repairs costing typically \$700 to \$1,400 for each tooth with a 10- to 15-year renewal cycle.

Doctors Limeback and Kathleen Thiessen, PhD, among other experts, show fluoridated drinking water (FDW) to be an outdated policy. A purportedly dental health-care public policy has now become a wastewater management policy issue. Some 99 per cent of FDW is now used for non-medical purposes and finds its way to wastewater treatment facilities. But it is not being treated there. Hence fluoride is released to source water, such as reservoirs, ponds, rivers, lakes and oceans. This toxic pollutant is returned to the environment to play further havoc with human and other living entities. This is illegal per the *Ontario Safe Drinking Water Act, 2002*.

Provincial and local public health officials who resist such change undermine the public's general health and reduce their trust in public dental health care. PEO is well positioned through its members' multiple roles in water treatment processes to provide policy leadership. Ontario ought to replace its FDW policy and practice with a well-reasoned and rational approach. The following PEO policy action plan is proposed:

- issue a public statement to all interested parties and Ontario residents declaring its opposition to FDW and demanding appropriate action by the Ontario government to end its use;
- provide appropriate guidance to professional engineers and meet in the coming months with its members via the chapters to articulate its new FDW policy;

Letters to the editor are welcomed, but must be kept to no more than 500 words, and are subject to editing for length, clarity and style. Publication is at the editor's discretion; unsigned letters will not be published. The ideas expressed do not necessarily reflect the opinions and policies of the association, nor does the association assume responsibility for the opinions expressed. Emailed letters should be sent with "Letter to the editor" in the subject line. All letters pertaining to a current PEO issue are also forwarded to the appropriate committee for information. Address letters to [jcoombes@peo.on.ca](mailto:jcoombes@peo.on.ca).

# [ LETTERS ]

- engage the Ontario Ministry of the Environment (MOE) to have:
  - MOE take the provincial lead to repeal the Ontario *Fluoridation Act, 1990*, and
  - pursuant to section 20 of the *Safe Drinking Water Act, 2002* implement a regulation banning immediate further fluoridation of Ontario drinking water treatment plants;
- insist the Ontario government withdraw now from the intergovernmental coordinating committee chaired by Health Canada on FDW to demonstrate its opposition to this dangerous and obsolete practice;
- suggest that the Ontario government introduce via its chief medical officer of health a 21st century public dental care program to supersede FDW. Emphasis should be put on counselling per the *Ontario Health Care Consent Act* of parents and students on the roles of diet, dental hygiene, annual dentist checkups and funded dental treatments to deal with caries and/or dental fluorosis among the poor; and
- advise the CEO of Engineers Canada of its FDW guidance and recommend it take similar action vis-a-vis the federal government and other provincial governments.

Gerry Cooper, P.Eng., Toronto, ON

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