



Professional Engineers
Ontario

ENGINEERING DIMENSIONS

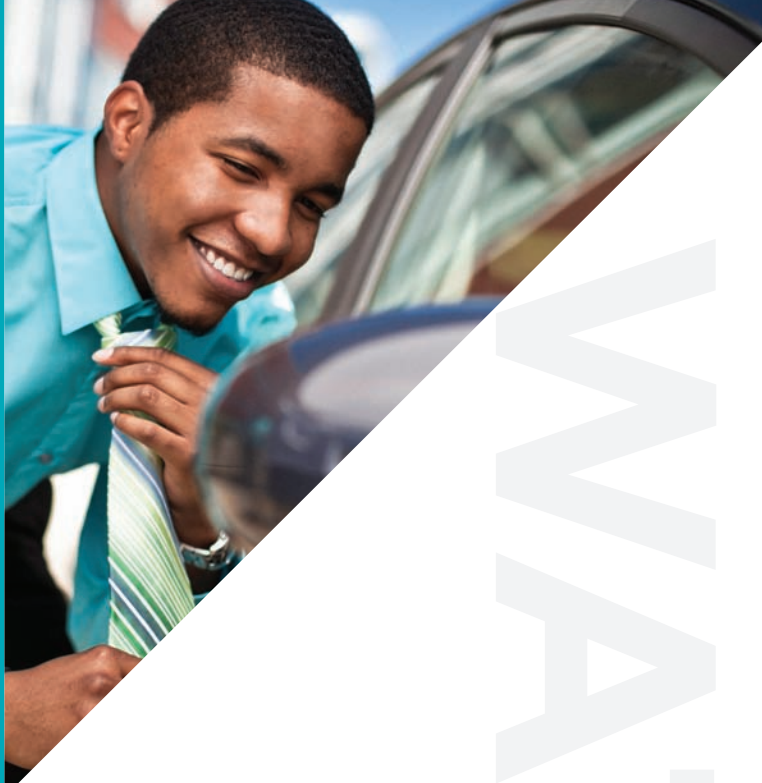
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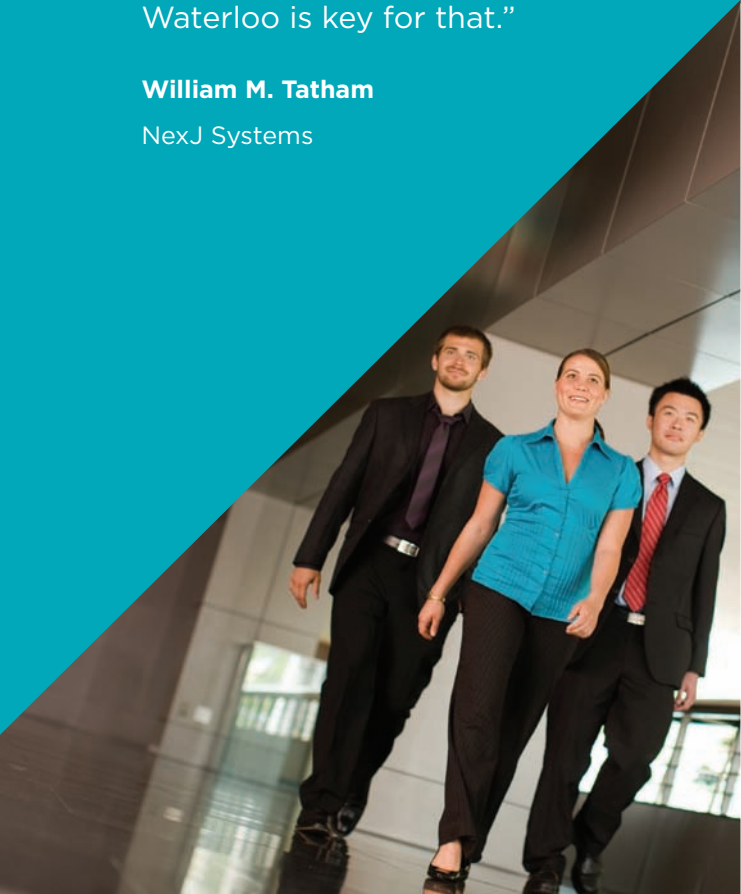
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ACCOUNTABILITY IN REGULATION



Annette Bergeron, P.Eng.
President

I AM HUMBLLED by the support from my professional colleagues to lead the association as its 94th president. Thank you.

At PEO's 91st annual general meeting (AGM), I delivered my first remarks to attending licence holders as their new president and I would like to share them with you as well:

"In the next 12 months, we will bring a renewed focus to PEO's regulatory functions and a plan to prioritize where our association should maximize its resources. Why, you may well ask, is there engineering activity in Ontario that is effectively unregulated? Is it related to

the fact that Ontario's uptake rate in licensure is the lowest in Canada? Prospective licence holders of the profession are choosing not to seek licensure because they do not believe it is necessary to earn a living. In addition, employers of engineering graduates, including all levels of government, are reluctant to require them to be licensed. These are important issues that need to be addressed.

"Simply put, our resources should support our regulatory functions. Resources should be allocated to licence- and discipline-related initiatives first. We can then measure regulatory effectiveness by identifying outcomes such as licence application rate versus successful outcomes, number of disciplinary cases versus number of complaints, and changes to the *Professional Engineers Act*, such as the repeal of section 12(3)(a) of the act.

"Other regulatory issues might be: the lack of legislative constraints on the areas in which a licensee may practise, the lack of specialty-specific certification procedures, and the lack of a mandatory requirement for continuing education. The question may arise as to how PEO ensures continuing competency, or competency in the area in which a P.Eng. practises.

"We must also be prepared to be proactive to any threats to PEO as a self-governing body. In the coming months, we'll receive recommendations from the Elliot Lake Inquiry and we must be prepared to address issues.

"As the 2013-2014 council begins its work, I will aim to continue a cohesive, collaborative and accountable council and regulatory body. At our council workshop in June, we'll decide on our plan, focus and desired outcomes for the year and you, the licence holder, will know what we're doing.

"Ontario has an advantage over other provinces. We have two engineering bodies in Ontario, leaving PEO the luxury of focusing on regulation, and OSPE on advocacy and member services. I know we can leverage each other to make PEO better than it has ever been.

"My work has always been guided by the philosophy of consensus-building negotiations, and I will continue to stress this theme at PEO's council table. I'm anxious to continue work with my council colleagues, PEO staff and our dedicated contingent of volunteers across the province to advance the association's regulatory mandate. My congratulations to those newly elected to PEO council and my thanks to those whose terms have concluded. And

thank you to Past President Dixon for his valued mentorship during my term as president-elect."


The weekend of PEO's AGM on April 26 and 27 provided a number of highlights that showcased the diversity and importance of the profession, as well as the role of the association.

Our 91st business meeting allowed licence holders to participate in the governance of the profession, and webcasting the event in real-time (the webcast is available on PEO's homepage) increased the accessibility of information to a broader audience. Our AGM keynote luncheon speaker, Gerry Chaput, P.Eng., assistant deputy minister, provincial highways management, Ministry of Transportation, provided an entertaining and informative perspective on the diverse engineering accomplishments at the ministry. Following the luncheon was the first assemblage of the 2013-2014 council. The six women and 23 men on the new leadership group provide province-wide representation from a wide array of sectors, including the business community, industry, academe and government.

Our first Penta Forum allowed delegates to explore ways to improve the operations and the governance of PEO through one of our most valuable resources: our 36 chapters across the province. Sixteen presenters spoke on a variety of topics, including chapter budgets and business planning; preparing awards nominations; and our communications processes, all of which aimed to maximize the contributions of the chapters.

The wonderful and valued work of six of our volunteers was celebrated at PEO's 2013 Order of Honour Awards gala. Congratulations to Philip Maka, P.Eng., FEC (companion); Corneliu Chisu, P.Eng., FEC (officer); Gheorghe Bacioiu, PhD, P.Eng. (member); Sarah Jin, P.Eng. (member); Pappur Shankar, P.Eng. (member); and Noubar Takessian, P.Eng., FEC (member), who were recognized for their devoted and selfless contributions to the profession.

Ours is a wonderful profession and together we must commit to serving and protecting the public interest through our licences. I welcome your participation and support.

Thank you! 

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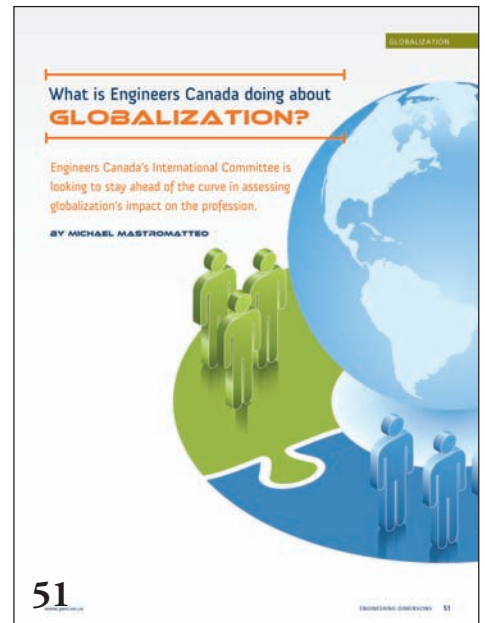
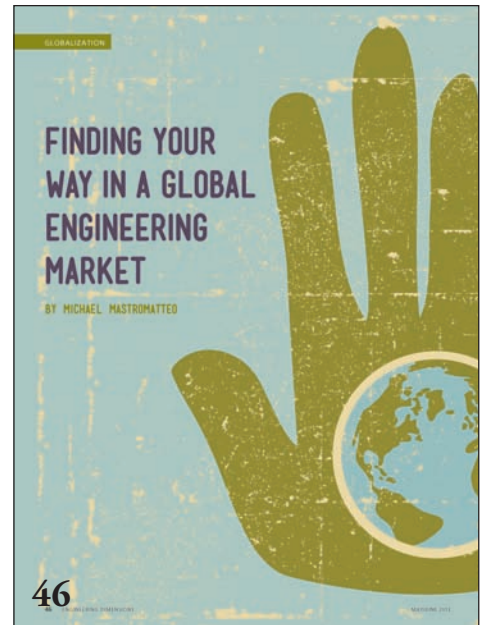
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ENGINEERING DIMENSIONS



Professional Engineers
Ontario

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

Gillian Thomas
gthomas@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

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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.

THIS ISSUE: It's becoming impossible to ignore the impact of globalization on today's engineering practice. With more and more Canadian engineers working abroad, how do practitioners uphold a consistent set of standards, codes, regulations and ethics when working outside their normal jurisdictions?

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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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WHEN IN ROME?



Jennifer Coombes
Editor

ONTARIO ENGINEERS HAVE been lending their knowledge and skills to international projects for decades. And in an era when you can get from almost any place in the world to another in one day, and information can be communicated in an instant, it's no surprise to find Ontario engineering companies at work in projects all over the world.

However, as engineers with international experience can attest, working in another country can be a great experience but it is also certain to add layers of complexity to a project. A particularly delicate issue: Do engineers apply their home country's legal and ethical codes and standards, the host country's, or some combination of both?

As Michael Mastromatteo writes in "Finding your way in a global engineering market" (p. 46): "In many places in the world, engineering is unregulated, or regulatory and licensing regimes are in their infancy. When engineers licensed in Ontario work in such jurisdictions, whose rules, standards and practice guidelines apply?"

Chris Newcomb, P.Eng., Canada's representative on the Executive Committee of the International Federation of Consulting Engineers, says: "Engineering principles are universal, but every engineering project takes place in a cultural, social, environmental and economic context, and modern-day consulting engineers have learned to adapt their work to the local context."

Maintaining legal and ethical standards is only one of the considerations engineers face with the globalization of their profession. And, of course, Ontario engineers aren't the only ones confronting these challenges. This issue, Michael Mastromatteo also interviewed Chris Roney, P.Eng., BDS, FEC, PEO councillor and one of PEO's directors on the Engineers Canada board, to fill us in on what Engineers Canada's


International Committee is looking at relating to trends in engineering mobility and the potential impacts of globalization on education, practice and regulation in Canada (p. 51).

This issue we welcome Annette Bergeron, P.Eng., our new PEO president for 2013-2014, who started her term April 27 (p. 3, 9). We also bring you highlights of the Order of Honour Awards, which on April 26 inducted four new members, one officer and one companion into the order (p. 9), and profile this year's G. Gordon M. Sterling Award recipient (p. 11). The rest of our AGM coverage will, as always, be found in our July/August issue.

As a final note, I'd like to mention that our last issue was delivered to most of the membership in digital form. For those of you who are new to our digital edition, we hope you enjoyed your first interactive, environmentally friendly issue of *Engineering Dimensions*. If you would prefer to receive a paper copy of the magazine, it's not too late to make the switch. In fact, at any time you can toggle from digital to paper and back again. Simply go to www.peo.on.ca and click on the licence holder services tab to manage your home and business email addresses and magazine subscription options.

I'd love to get your feedback on the digital edition to learn how we can make it better fit your needs. Email me any time at jcoombes@peo.on.ca with your thoughts. Σ

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David Adams wins third PEO presidential term

By Jennifer Coombes

FOLLOWING THE CLOSE of voting on March 1, it was revealed that David Adams, P.Eng., FEC, narrowly bested his closest opponent, Paul Ballantyne, P.Eng., FEC, to secure his third term as PEO president. Adams, who will begin his term at the 2014 annual general meeting, was PEO president first in 2008 and then in 2011.

In this election, just 8.5 per cent of PEO's membership voted for the position of president-elect, a position for which all members are eligible to vote, which is down sharply from recent years.

Thomas Chong, P.Eng., FEC, was elected vice president for the 2013-2014 council term.

The new council, including 2013-2014 President Annette Bergeron, P.Eng., and the following newly elected councillors, took office on April 27 at PEO's annual general meeting in Toronto.

- Councillors-at-large Roydon Fraser, PhD, P.Eng., FEC, and Roger Jones, P.Eng.
- Eastern Region Councillor David Brown, P.Eng., BDS, C.E.T.
- East Central Region Councillor Changiz Sadr, P.Eng., FEC
- Northern Region Councillor Michael Wesa, P.Eng., FEC
- West Central Region Councillor Rob Willson, P.Eng.
- Western Region Councillor Ewald Kuczera, P.Eng.

At the first meeting of council on April 27, Sandra Ausma, PhD, P.Eng., was elected to the position of vice president elected by and from the members of council, and Ishwar Bhatia, P.Eng., Michael Wesa and Rebecca Huang, LLB, were elected as additional members of the Executive Committee.

HOW YOU VOTED

PRESIDENT-ELECT

David Adams	1809
Paul Ballantyne	1700
George Comrie	1558
Corneliu Chisu	1334

VICE PRESIDENT

Thomas Chong	3398
Christian Bellini	2954

COUNCILLOR-AT-LARGE

Roydon Fraser	3749
Roger Jones	3331
James Chisholm	2716
Wenqin Shao	1731

EASTERN REGION COUNCILLOR

David Brown	567
Sucha Mann	239
Tim Kirkby	229

EAST CENTRAL REGION COUNCILLOR

Changiz Sadr	720
Rajiv Srivastava	430
Nicholas Colucci	candidacy withdrawn

NORTHERN REGION COUNCILLOR

Michael Wesa	acclaimed
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WESTERN REGION COUNCILLOR

Ewald Kuczera	613
Dennis Pupulin	320
Anthonios Partheniou	284

WEST CENTRAL REGION COUNCILLOR

Robert Willson	623
Greg Wowchuk	532
Faizul Mohee	271

PEO welcomes new president

Outgoing President Denis Dixon, P.Eng., FEC, congratulates incoming President Annette Bergeron, P.Eng., at PEO's annual general meeting April 27 in Toronto. Check news in the July/August issue of *Engineering Dimensions* for full coverage of the meeting.



Order of Honour awards six for exemplary volunteer contributions

By Jennifer Coombes

THEN PEO PRESIDENT Denis Dixon, P.Eng., FEC, and Helen Wojcinski, P.Eng., FEC, chair of the Professional Engineers Awards Committee, presided over the April 26 event in Toronto that saw six deserving P.Engs receive PEO's highest award for volunteer service to the profession—the Order of Honour.

“PEO volunteers are the lifeblood of the association, sharing a desire to make a difference in their professional communities by contributing their time, energy and exceptional talents to a cause they hold dear. Engineering in Ontario is a stronger profession as a result of their shared commitment to give their best towards our common goals,” said Wojcinski.

Four engineers, including Gheorghe Bacioiu, PhD, P.Eng., Haoxuan Sarah Jin, P.Eng., PMP, FEC, Pappur Shankar, P.Eng., and Noubar Takessian, P.Eng., FEC, were inducted as members, and two recipients were elevated to the ranks of officer and companion. Corneliu Chisu, P.Eng., CD, FEC, MP (Pickering–Scarborough East), was invested as an officer of the order, while Philip Maka, P.Eng., FEC, was invested as a companion, the Order of Honour's highest achievement. For further information about the achievements of this year's recipients, see *Engineering Dimensions*, March/April 2013, p. 9.

Here is some of what the awardees had to say in accepting their medals:

“I'm extremely grateful and honoured to be before you tonight. This profession allows me to use skills to help fellow Canadians, not only in

engineering, but also in other aspects of their lives. I had the chance to work from the very beginning of my journey as an engineer with two of the best mentors—Stephen Tsui, MEng, P.Eng., and Sean McCann, P.Eng. Thank you for all you did for me and I'll always remember your enduring patience and for holding my hand and guiding my steps.”
Gheorghe Bacioiu, PhD, P.Eng., member of the order

“I'm humbled and deeply honoured to receive this award. I cherish every moment spent volunteering with PEO and serving the community in York Region. I was born and raised in China, but in 1996 I had the opportunity to choose Canada as my home. I went on to receive my P.Eng. in 2001. To a new immigrant, this licence meant a lot to me. It has provided me professional recognition as an engineer and I am very proud to be part of the profession.”
Sarah Jin, MBA, P.Eng., PMP, FEC, member of the order

“I'm so pleased to be recognized by my colleagues with this honour. The more I got involved [with the chapter] the more passionate I got. The profession



At the April 26 gala in Toronto, six professional engineers were inducted into PEO's Order of Honour (back row, left to right): Noubar Takessian, P.Eng. (member), Sarah Jin, MBA, P.Eng., PMP, FEC (member), and Philip Maka, P.Eng., FEC (companion). Front row: Pappur Shankar, P.Eng. (member), Corneliu Chisu, P.Eng., CD, FEC (officer), and Gheorge Bacioiu, PhD, P.Eng. (member).

needed our help. We need government to listen to us. We needed to make the public aware of what our profession does. Sixteen years later, I'm still actively involved. I guess you can say that I'm hooked. I'm proud to be part of PEO." *Noubar Takessian, P.Eng., FEC, member of the order*

"With gratitude I stand before you. This award is being bestowed not just for my personal efforts but for my colleagues as well. The Mississauga Chapter shares in the glow of this award with me. I've stolen a line from John F. Kennedy by saying, 'Ask not what the engineering profession can do for you but what each and every engineer can do for the profession.'" *Pappur Shankar, P.Eng., member of the order*

"It is a pleasure and a privilege. I am deeply honoured and humbled. This recognition and award is about the work of many volunteers who dedicate countless hours to PEO. I believe if you would like to change the world, you need to be an engineer. The profession of engineering is vital to our develop-

ment and prosperity as a country. This is a subject that I feel passionately about. To develop our country and ensure the well-being of our people in an increasingly complex and interdependent world, engineers will need to play a greater role." *Corneliu Chisu, P.Eng., CD, FEC, officer of the order*

"I am truly honoured and humbled to be receiving this prestigious award. When I was first invited to attend a meeting at the Mississauga Chapter, I could never have imagined how I would be so involved in the profession. Before becoming involved with PEO, I thought its only function was providing engineers with a licence to practise. I soon came to realize it could have a much greater influence in both the personal and professional life of a member. By becoming involved in the organization, you can meet and share experiences with fellow practitioners who are eager to strengthen the profession. You can develop and hone your leadership skills and, most importantly, you are able to make a positive contribution to society. Volunteering has given me the opportunity to meet many fellow engineers, not only across the province, but across Canada. I believe good volunteers are essential to the success of PEO. It's difficult to imagine our profession without volunteer support." *Philip Maka, P.Eng., FEC, companion of the order*

STERLING AWARD RECIPIENT HONOURED



Zachary White, EIT, was presented with the G. Gordon M. Sterling Engineering Intern Award at the 2013 Professional Engineers Ontario Order of Honour Awards gala April 26 in Toronto. White is a civil engineering graduate of Lakehead University and a structural engineering intern with Genivar Inc. He has over two years of well-rounded structural engineering experience and is also an active member of PEO's Lakehead Chapter. The annual G. Gordon M. Sterling Award provides up to \$3,500 to support leadership development pursuits and is available to registered engineering interns. Those chosen for the award have demonstrated a commitment to the profession, and interest and readiness to take on a leadership development experience. For further information about this year's recipient, see *Engineering Dimensions*, March/April 2013, p. 11.

Forensic engineering report on mall collapse recommends systematic inspection regime

By Michael Mastromatteo

Ontario's engineering regulator continues to monitor testimony at the hearings of Part 1 of the Elliot Lake Commission of Inquiry, which is examining events leading up to last summer's collapse of part of the Algo Centre Mall in Elliot Lake, Ontario.

A section of the roof-top parking deck of the mall collapsed June 23, 2012, killing two women and causing injuries to about 20 others. The collapse also brought significant economic disruption to the northern Ontario community.

The province responded to the disaster by striking a commission of inquiry, led by Commissioner Paul R. Bélanger, to investigate the cause of the collapse and make recommendations to prevent similar failures from occurring in the future.

PEO was granted standing as a participant in Part 1, and produced documents to the commission, some of which have been entered as exhibits.

A forensic engineering report into the collapse, commissioned by the OPP and entered as an exhibit at the inquiry on March 19, found that severe corrosion of welds on a steel connector supporting the roof parking lot led to the sudden collapse. Testimony at the inquiry has shown that for most of the mall's 32-year life, water leaked through the roof-top parking deck and that repair efforts by the mall's three owners were never successful at fully resolving the problem.

In the report of its forensic investigation of the incident, Toronto-based engineering firm NORR Ltd. says there was, in fact, a "two-stage failure" at the mall, which included several months of severe corrosion that weakened the structure and eventually led to the shearing off during the roof collapse.

"The significance of the two-stage failure is that the depletion of capacity went on for a long time and collapse was in the making for years," the report states. "It is, in fact, somewhat surprising that failure did not happen earlier."

The report calls for increased awareness among the engineering community and authorities with jurisdiction, as to the seriousness of corrosion in steel buildings. "Structural engineers conducting inspection of steel buildings need to use a systematic approach, which includes measurement of loss of section, review of members and connections, ascertainment of sources of corrosion catalysts and informing owners of the need for

[NEWS]

future inspections where the conditions call for such revisits,” the report says. “Guidelines for the inspection of building structures and regulations to avoid calamities such as the Algo Centre Mall may be in order.”

The NORR investigation took place in July 2012.

A panel with representatives of NORR, Giatec Scientific, BMT Fleet Technology, and NRC Construction is scheduled to testify to the report of the forensic engineering investigation on May 29 and 30. Giatec, BMT and NRC were sub-consultants to NORR in its investigation.

The Algo Mall collapse prompted then PEO President Denis Dixon, P.Eng., FEC, to recommend creation of an independent provincial engineer position within the Ontario government to oversee engineering works in the province.

Linda Latham, P.Eng., PEO deputy registrar, regulatory compliance, attended the first week of hearings at the inquiry. She described the mood at the inquiry as sombre, with Elliot

Lake residents, including the family of one of the deceased, keenly interested in finding out what went wrong.

“Due to PEO’s regulatory role, it would be inappropriate for the regulator to take any position at this time on engineering or engineers involved at Elliot Lake,” Latham said. “It is widely anticipated, however, that the commissioner will be making recommendations with respect to maintenance of existing buildings.”

PEO has opened its own investigations into what part, if any, the conduct of its licence and certificate holders might have played in the tragedy.

As of late April, PEO has not been called to testify, but expects to participate in making recommendations to the commission. Witnesses for Part 1 are currently scheduled into mid-July.

Engineering project awards highlight of York Chapter annual meeting

By Michael Mastromatteo



I-Cheng Chen, P.Eng., Advanced Micro Devices (centre), displays the first prize cheque at the February 16 Engineering Project of the Year Awards, sponsored by PEO’s York Chapter. Joining him for the presentation were (left to right) Matthew Xie, P.Eng., FEC (York Chapter Awards Committee co-chair), MPP Frank Klees, Liz Daher, P.Eng. (project manager), and Gordon Ip, P.Eng., FEC (York Chapter vice chair).

PEO’S YORK CHAPTER recently combined its annual meeting and licence presentation ceremony with an engineering competition highlighting the chapter’s growing link with local businesses.

The York Region Engineering Project of the Year Awards, held February 16, was the culmination of months of planning and preparation by the chapter executive. It involved an open competition for projects of a technical nature undertaken by businesses and organizations in York Region.

The competition was aimed at showcasing the engineering profession while providing competitors with a high-profile forum to market their technical expertise and achievement.

The three finalists were on display at the annual meeting and the winner was announced by the end of the evening.

As part of the official program, the engineer representative of the winning business provided the keynote address for the evening.

Claiming the \$2,000 first-place prize was Advanced Micro Devices (AMD), represented by I-Cheng Chen, P.Eng., AMD director of mobile engineering.

AMD's winning effort was the Massively Parallel Advanced Processor Unit (APU) for high-performance video computing, a project combining a graphics processor with a computer's central processor for a combined APU.

Following announcement of the winners, Chen provided details of the company's first-place project.

Second place, with a prize of \$1,500 went to Chisholm Fleming and Associates consulting engineers, while the \$1,000 third-place prize went to Sartrex Power Control Systems Inc.

A panel of four York Chapter members and one guest judge evaluated the projects based on innovation, technical merit, environmental/social impact, commercial viability and impact on York Region. Judges included Kam Leong, P.Eng., FEC (past chair), Edward Poon, P.Eng., FEC (former executive member), Gordon Ip, P.Eng., FEC (vice chair), Liping Fang, PhD, P.Eng., associate dean, undergraduate programs and student affairs, faculty of engineering and architectural science, Ryerson University, and Liz Daher, P.Eng., project manager for the York Region competition.

Eligibility criteria for contestants included an operational presence in the region and oversight of the project by at least one licensed engineer.

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A Professional Engineer Gave Her Clean Water

Retired P.Eng. Jake Dick has completed 15 volunteer assignments with CESO since 2000. His experience in designing and operating water treatment systems for the Ontario government has been invaluable to the residents of Santa Rosa de Copan, a community of 42,000 located in the mountains of Honduras. As a result of Jake's work and other CESO sanitation projects over the past decade, Santa Rosa's children now have clean water every day. Waterborne disease has been cut in half, and infant mortality has dropped by 75 per cent.

Be a part of the solution.

We are currently recruiting volunteer engineers for the following assignments:

- Assist a government agency in Senegal planning an urban sanitation project.
- Establish procurement methods, environment and quality control of public works for an agency in Senegal.
- Provide technical assistance, research services and training to farmers in Honduras with their laboratory of vegetable tissues in agriculture biotechnology, greenhouse production, quality control and production systems.

If you have at least 10 years of professional experience and are interested in volunteering with CESO, in Canada or around the world, please contact Jennifer Filson at 647-478-4100 or jfilson@ceso-saco.com.



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Project undertaken with the financial support of the Government of Canada provided through the Canadian International Development Agency (CIDA).

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Daher told *Engineering Dimensions* the contest will likely become an annual event.

“The chapter has done a lot of work reaching out to the community in the form of mentoring, scholarships, and various initiatives that partner with local schools and student contests,” Daher said, “but we have not done anything specifically aimed at connecting with local businesses. So the goal was to expand on the existing outreach initiatives and reach out to local businesses and to the large community of professional engineers in York Region.” Guest speaker at the event was Frank Klees, MPP for Newmarket-Aurora. Klees thanked the York Chapter executive for the invitation and later took part in the licence certificate presentation to the newly licensed engineers.

“The engineering profession is often taken for granted,” Klees said, “but there’s no doubt that we in Ontario will need your profession to guide us over the next 10 years, especially as we address the huge infrastructure deficit in this province.”

Klees also suggested that engineers remain critical to the health and prosperity of the province and commended PEO’s then President Denis Dixon, P.Eng., FEC, for his efforts to promote an independent provincial engineer office within the Ontario government.

Dixon also spoke at the event, bringing greetings from the regulator and urging the newly licensed engineers to look beyond traditional roles to become well-rounded, diversified and entrepreneurial practitioners.

Chapter Vice Chair Gordon Ip was moderator for the evening’s activities. “It was quite a bit of work, but it was highly interesting and quite fun to define the qualifications and the judging standards for this inaugural award,” he said. “We are definitely planning on this being an annual event for the chapter. Our next attempt at this award will be more granular in terms of awards for various engineering disciplines and our hope is to obtain significantly more abstract submissions.”

New Chapter Chair Dennis Woo, PhD, P.Eng., said the chapter’s vision for 2013 and beyond is to show community leadership by fostering stronger ties with local businesses and organizations. Woo called on the newly licensed members of the chapter to consider volunteering as one way of supporting the profession and the community.

With more than 7000 members, the York Chapter is one of the largest and fastest-growing PEO chapters.

The evening closed with presentation of certificates to 42 newly licensed engineers of the York Chapter.

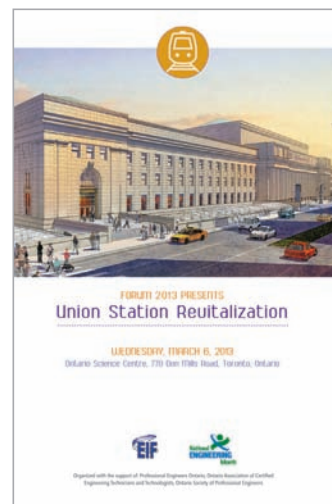
Union Station rebuild presents unique challenges, say engineers at 2013 EIF

By Michael Mastromatteo

Engineers working on the revitalization of Toronto’s historic Union Station cite innovation and new ways of thinking as key ingredients to the success of construction projects, especially those imbued with unique and challenging constraints.

The March 6 Engineering Innovation Forum (EIF) at the Ontario Science Centre brought together four professional engineers who outlined the technical and logistical challenges involved in redeveloping Union Station.

Described as Toronto’s biggest-ever construction project, the Union Station revitalization calls on engineers to modernize the city’s biggest transportation hub without impeding daily commuter flow and



without violating the structure’s heritage building status.

Constructed in 1927, Union Station was declared a heritage building in 1975. It is now owned jointly by the City of Toronto and GO Transit.

Revitalization plans call for constructing a retail concourse below the level of the original foundations, as well as rebuilding and modernizing the train shed structure. Plans also involve redeveloping the Toronto Transit Commission’s Union Station subway platform to facilitate increased pedestrian traffic flow to and from the train station.

One of the largest audiences to attend the EIF heard Richard Coveduck, P.Eng., Hassan Saffarini, PhD, P.Eng., Peter Di Lullo, P.Eng., and Mario Nalli, P.Eng., describe different aspects of the vast project.



Participants at the 2013 Engineering Innovations Forum (EIF) included (left to right) Richard Coveduck, P.Eng., moderator Steven D'Souza of CBC News, Mario Nalli, P.Eng., Raviv Rattan, P.Eng., of the EIF Committee, Hassan Saffarini, PhD, P.Eng., and Peter Di Lullo, P.Eng.

The forum was moderated by CBC News reporter Steven D'Souza.

Coveduck, director, design, construction and asset preservation, City of Toronto, led off by outlining the history of Union Station and its significance as a transit hub. He offered an overview of the major components of the revitalization project and emphasized how public safety, especially considering the huge increase in pedestrian traffic flow, has been paramount throughout.

Following Coveduck's presentation, Saffarini, manager, structural engineering, NORR Limited, described some of the complex engineering and design challenges presented in excavating beneath Union Station's original foundations, while ensuring the heritage character of the building be maintained throughout the restoration.

"One of the greatest challenges for us was in matching the innovation shown by the original builders of Union Station with the innovations of today," Saffarini said. "Some of the work we are undertaking has never been seen on this scale before."

Saffarini also discussed a number of special aspects of the project, including the breaking and buttressing of original supporting columns, the addition of new load-bearing, steel-framed columns, the jacking of older concrete within the foundation, and the introduction of carbon fibre-reinforced polymers to add more earthquake resistance to the new foundations.

"Another constraint was that passengers and commuters had to remain more or less oblivious to what was going on beneath them," he said.

Di Lullo, manager, Union Station train shed project, GO Transit, outlined the train shed restoration, while Nalli, senior project engineer, Toronto Transit Commission (TTC), described the second platform and concourse improvement scheme. Di Lullo pointed out that Union

Station's original train shed—essentially a roof to protect passengers from the elements while boarding or disembarking the trains—was a state-of-the-art, although aesthetically uninspired, piece of work. The redeveloped shed will include a "bush roof" with energy-collecting solar panels and incorporate new features to better serve the travelling public.

"Throughout this entire process, engineering innovation was essential in meeting some of the special challenges," Di Lullo said.

Held annually during National Engineering Month, the EIF aims to raise public awareness of engineers' creative role in linking science and technology. Previous topics have included nanotechnology, robotics, intelligent transportation systems, disaster relief and the engineering-health care link.

The forum is organized by a committee of volunteers, this year headed by Paul Annis, C.E.T.

Rajiv Rattan, P.Eng., a member of the EIF Committee, offered closing remarks.

NEM delivers the message in 2013

By Erica Lee Garcia, P.Eng.



Local high school students take part in a Rube Goldberg NEM event organized by the Waterloo Engineering Society on March 7, 2013. Photo: Michael Seliske

ASK MOST KIDS what they think engineers do, and they may just stare blankly at you. Many will not be able to answer at all, and many more don't realize the tremendous importance of the engineering profession. Hint: It's vital to the activities, structures and objects that shape everyone's life.

With the pace of technology ever-increasing and the demand for skills in engineering and technology growing steadily, Canada's ability to spark the interest of its youth is of critical importance.

The team coordinating National Engineering Month (NEM) for Ontario in 2013 set out to tackle this awareness gap with four key messages:

1. Engineering and technology solutions to a diverse set of 21st century challenges require a diversity of thinkers. There's a place for you in engineering and technology;
2. Engineering and technology shapes the world around us: yesterday, today and tomorrow;
3. Engineering technology applies creativity and imagination to turn ideas into reality; and
4. Engineering and technology is essential to the safety, health, happiness and comfort of our

friends, family and distant neighbours. Locally and globally, people working for people. Engineers and technologists make a world of difference.

In 2013, the partnership between Engineers Without Borders (EWB) Canada, the Ontario Association of Certified Engineering Technicians and Technologists (OACETT) and Professional Engineers Ontario (PEO) continued, and NEM reached new heights: over 140 events and well over 200,000 people reached through an online engagement platform. From Niagara Falls to Thunder Bay, Kenora to Ottawa, and dozens of communities in between, Ontario had a spirited and proud celebration of NEM.

A total of 24 sponsors contributed to the activities, and many provided content for the website and attended NEM events.

George Comrie, P.Eng., PEO's then vice president, spoke on behalf of the regulator about NEM 2013. "We are pleased to have had this opportunity to collaborate with other members of the engineering community to promote the importance of our profession to the public, and especially to educate today's youth on the possibilities of choosing engineering as a career," he says.

Comrie was also vice chair of the Engineering Innovations Forum, one of the many NEM Ontario events that invited the public to consider the innovations made by the engineering profession and its impact on our quality of life (see p. 14).

"We are pleased once again to be a part of this important celebration of engineering and engineering technology. National Engineering Month is an opportunity to explore, discover and gain appreciation for what engineers and engineering technology professionals do and, most importantly, it encourages young people to consider careers in these fields," said OACETT President Rod MacLeod, C.E.T. "OACETT supports the full spectrum of events and activities organized across the province for NEM 2013 and we're grateful to the volunteers who commit their time and energy to make this happen." Having OACETT on board allowed an even broader reach and a wider range of career options for kids to consider.

The Ontario Society of Professional Engineers (OSPE) also joined the campaign in coordinating several high-profile events and running a successful sponsorship campaign.

Says Nadine Miller, P.Eng., then president and chair of OSPE: "OSPE was thrilled to play a significant role in presenting National Engineering Month Ontario this year. Engaging future generations about the incredible wonders and boundless possibilities of engineering and technology is a vital step in building awareness and excitement about the power of this profession to shape a better, brighter future worldwide."

George, Roter, co-founder and CEO of EWB, spoke on behalf of his organization about the NEM campaign: "There is strength in collaboration between PEO, OSPE, EWB and OACETT. Also, effective engineering outreach requires engineering orgs, engineering industry, teachers and media to be marching to the same beat, and echoing and reinforcing the same messages. With global challenges heading our way, we can't afford to be inconsistent. EWB is proud to be a part of painting a picture of engineering as it truly is: a dynamic, creative and vital profession. National Engineering Month this year was bigger and better than ever, poised to influence the next generation of global problem solvers."

VOLUNTEERS STUDY NEW WAYS of resolving conflicts

By Michael Mastromatteo



PEO volunteers attending the April 11 Committee Chairs Workshop participated in a conflict handling exercise designed to encourage work teams to come to more transparent decisions.

A change management authority believes PEO can get more out of its committees by enhancing the teamwork, problem-solving and conflict-handling skills of volunteers.

Carol Beatty, PhD, president, Warp Speed Training Enterprises, and a professor at the Queen's University industrial relations centre, was guest presenter at this year's Chapter Chairs Workshop.

Held April 11 at PEO headquarters, the annual workshop is organized by the Advisory Committee on Volunteers (ACV) to provide committee and task force leaders with strategies to run more effective meetings and enhance the overall volunteer experience. The committee also maintains tools for volunteer training and organizes recognition programs for volunteers and their employers.

At the start of the workshop, PEO then President Denis Dixon, P.Eng., FEC, told participants that volunteers remain the lifeblood of PEO and are intimately involved at all levels of operation. Dixon also offered a personal wish to see more committee volunteers move on to elected positions with PEO council.

PEO volunteers and staff members, representing more than 40 task forces and committees, took part in the 2013 workshop.

The workshop also included a brief presentation by ACV member Tony Bonney, P.Eng., FEC, who discussed progress with the committee's "vital signs" survey. The survey, which charts volunteers' level of satisfaction with PEO support of committees, will be posted on the ACV page of PEO's website in June.

Michael Chan, P.Eng., chairs the ACV. Paul Ballantyne, P.Eng., FEC, was the committee's council liaison during the 2012-2013 council term.

Engineering skills shortage subject of discussion at federal committee

By Michael Mastromatteo

MAJOR PLAYERS IN the engineering community recently outlined some of the profession's deepest concerns before the federal government's standing committee on industry, science and technology.

At the February 7 meeting of the all-party committee, Marie Carter, P.Eng., chief operating officer, Engineers Canada; Richard Marceau, PhD, P.Eng., provost, University of Ontario Institute of Technology (UOIT); Claude Laguë, PhD, P.Eng., dean of engineering, University of Ottawa; and John Gamble, P.Eng., president, Association of Consulting Engineering Companies of Canada (ACEC-Canada), capitalized on the opportunity to offer insights into the state of engineering across Canada.

Also presenting before the standing committee was Janet Walden, vice president of research partnership programs, Natural Sciences and Engineering Research Council of Canada (NSERC).

In kicking off the session, committee chair David Sweet, MP, Ancaster-Dundas-Flamborough-Westdale, said the purpose of the meeting was "to pursue some insights" into engineering in Canada.

Among the key issues raised by the engineering panel were international credential recognition, diversity within the profession, maintaining currency in engineering education, and the engineer's role in overcoming the infrastructure deficit.

However, the topic of a potential shortage of experienced engineers came to dominate the discussion.

"As the need for the contributions of engineers to society grows, one of our biggest policy challenges will be how to respond to the looming engineering skills shortage," said Carter. "By 2020, we should see approximately 95,000 engineers either fully or partially retiring."

continued on p. 18



John Gamble, P.Eng., president, Association of Consulting Engineering Companies of Canada, presents at the February 7 meeting of the federal government's standing committee on industry, science and technology.

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One solution to an engineering skills shortage might involve stepped-up efforts to accredit and license internationally trained engineering graduates, Carter added. "Annually, our regulators process about 5500 applications from immigrants. We know that is about the highest in the regulated professions. We are looking at working with the streamlined efforts that are going on with the federal government. We have our regulators on board with us to help with that effort."

Marceau, who also represented the Canadian Academy of Engineering, emphasized educational reforms as one step in meeting the skills shortage.

"The Canadian Academy of Engineering recommends that the federal government provide leadership in creating a joint federal-provincial partnership for greatly accelerating our nation's capacity to develop human capital in all fields of engineering," he said. "The academy also recommends that representatives from industry, universities and the profession be called upon to provide advice on how best to achieve the needed gains in graduation rates at all levels."

A key message from Gamble was that stability and predictability in the regulatory and business environments will not only enhance economic development, but would also help the engineering profession train and retain its members.

"From a consulting engineering perspective, the more predictability or confidence in the business and regulatory climate, the better position we're in to make sound business decisions, to create opportunities, to

grow our economic activity and, just as importantly, to attract, train and retain employees," Gamble told *Engineering Dimensions*. "If there's uncertainty in the approval of major engineering projects, in the public or private sector—if there's unpredictability—it makes it very difficult for us to align our resources, both human and technological."

Alana Lavoie, manager of government relations, Engineers Canada, said that whatever the outcome of the committee presentation, it's important for engineers to keep legislators and policy-makers up to date on the profession's priorities.

"Every opportunity to speak to parliamentarians is an opportunity to present the perspective of the engineering profession," Lavoie said. "What was unique about the opportunity to present before the standing committee was the chance to do so with our colleagues—NSERC, ACEC-Canada, the Canadian Academy of Engineering, and others. The members of the committee were engaged and asked meaningful questions about the current and future state of the profession in Canada."

[IN MEMORIAM]

THE ASSOCIATION HAS RECEIVED WITH REGRET NOTIFICATION OF THE DEATHS OF THE FOLLOWING MEMBERS (AS OF MARCH 2013):

ACHIG, Eric-Alexander
Scarborough, ON

AGENSKY, Brian Lewis
Toronto, ON

ALAM, Maqsood
Pickering, ON

ALISON, Gordon Albert
Toronto, ON

ANAND, Basant Lal
Orleans, ON

ARNOLD, John Richard
Qualicum Beach, BC

ASHDOWN, Glenn William
Peterborough, ON

ATKINS, Harold Newbon
Brighton, ON

BANISTER, Jeffrey Norman
North Vancouver, BC

BASKOT, Vladimir
Etobicoke, ON

BECKETT, William Douglas
Belleville, ON

BELL, William Wynship
Toronto, ON

BENNETT, Arthur Percival Vaughan
Toronto, ON

BERK, Leonard Henry
Toronto, ON

BOLITHO, Richard Thomas Alverne
Toronto, ON

BOYCE, Bernard Thomas
Whitby, ON

BRISTER, Joseph Samuel
Oakville, ON

BROWN, Andrew Gordon
Markham, ON

BULMER, Ronald James
Ancaster, ON

CAMPBELL, Victor Edward
Ancaster, ON

CASKIE, Donald
Burlington, ON

CHILLINGSWORTH, Harry Rodger
Guelph, ON

COHN, Mircea Z.
Toronto, ON

COLES, Gerald Allen
Edmonton, AB

COLLINS, Alexander Douglas
Toronto, ON

CONNOR, John Henry
Orillia, ON

COOK, Charles Stuart
Rideau Ferry, ON

CORLEY, William Gene
Glenview, IL

CRUICKSHANK, Donald James
Brockville, ON

CUSHING, William Joseph
Waterloo, ON

CZERKAWSKI, Emil
London, ON

DAVIS, George Frederick Stanley
Ottawa, ON

DAVISON, Robert Bruce
Delta, BC

DAYAL, Dharam Singh
Brampton, ON

DIETRICH, John
Dearborn, MI

DOWDELL, Leslie Francis
Windsor, ON

DYSART, Gordon Alexander
Espanola, ON

ENTWISTLE, Ronald Alan
Pickering, ON

FELDMAN, Mottie
North York, ON

FINCH, Harry John
Mount Hope, ON

FISHER, Clare
Shelburne, ON

FISHER, David Simpson
Newcastle, ON

FOX, Joseph S.
Thornhill, ON

FROEBEL, Robert Anton
Scarborough, ON

GLOWCZEWSKI, Jan Piotr
North York, ON

GODBOLE, Pushkar Eknath
Ottawa, ON

GRANT, Warren Joseph
Mississauga, ON

GRIFFITHS, Richard Victor
Oakville, ON

HAFENBERG, Sven Olaf
Mississauga, ON

HALTER, G. Sydney
Thunder Bay, ON

HALVORSON, William George
Ridgeway, ON

HARVEY, John Thomson
Brantford, ON

HATTER, Ray Lewis
Whitby, ON

HONSBERGER, David William
Mississauga, ON

HOOK, John Peter
Innisfil, ON

HOWCHIN, Ronald Malcolm
Etobicoke, ON

HUBBS, Donald Edouard Haviland
Guelph, ON

HUE, Richard Thane
Newmarket, ON

HUNTER, David Iain Squair
Toronto, ON

ISKANDAR, Ossama Lawendy
Mississauga, ON

JAMES, Ronald Lloyd
Stouffville, ON

JONES, William Howard
Ottawa, ON

KELK, George Frederick
North York, ON

KLASSEN, Rodney Victor D.
New Hamburg, ON

KOETT, Lyle Mark
Sudbury, ON

KOWALSKI, Andrzej
Scarborough, ON

[IN MEMORIAM]

KOZICKI, Edwin Albert
Niagara-on-the-Lake, ON

KRISHNAR, Ampihaipalan
Scarborough, ON

LEE, Brian
Wasaga Beach, ON

LEIGH, John Digby
Montreal, QC

LERNER, Emil
Mississauga, ON

LIPSETT, John James
Deep River, ON

LOVELESS, Arthur John
Limehouse, ON

MACAULAY, Douglas Hazen
Hudson, QC

MacMILLAN, Robert Ross
Waterdown, ON

McKINNON, Richard Georg
Kanata, ON

McMANN, Gary Allen
Windsor, ON

McNEILL, Donald
Winfield, BC

MECHIN, Robert Lee
North Vancouver, BC

MERRITT, Harold Joseph
Huntsville, ON

MINGAIL, Aaron
North York, ON

MONASTERIOS, Cecilia Maria
Kingston, ON

MONKMAN, John Lloyd
Oxford Station, ON

MORNINGSTAR, Walter Edward
Welland, ON

MURDOCH, Charles Hildreth
Burlington, ON

MYSLICKI, John Joseph
Stittsville, ON

NEIL, Lawrence Andrew McEvoy
Sarnia, ON

NICOLLE, Elmon Grant
Murray Harbour, PE

NIESTRAWSKI, Zbigniew Wojciech
Stratford, ON

NORMAND, Alastair
Toronto, ON

NOTHDURFT, Raymond Andrew
Stratford, ON

OLIVER, Paul Denis
Bobcaygeon, ON

O'LOUGHLIN, Sheamus Joseph
Oakville, ON

PATARAN, Samuel
Brampton, ON

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PENGELLY, L. David
Dundas, ON

PLUT, John David
Markham, ON

**POEHLMAN, William
Frederick Skipper**
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POST, Joseph Andrew
Kanata, ON

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RANT, Michael John
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READE, Richard Bruce
Guelph, ON

RICHARDSON, George Henry Michael
Lefroy, ON

RICHARDSON, Sidney Irving
Toronto, ON

ROBSON, Neil Cormack
Ottawa, ON

ROOTHAM, Harold Francis
Burlington, ON

ROSEBRUGH, Howard Bennett
Cambridge, ON

ROSS, Frank Alexander
Vineland, ON

RUBINO, Terry Anthony Charles
Nepean, ON

SANJANA, James
Kincardine, ON

SCOONES, Philip David John
Fonthill, ON

SCOTT, James Herbert
Toronto, ON

SHADY, Aly
Nepean, ON

SHERWOOD, Gary Vincent
Thunder Bay, ON

SINCLAIR, John Corning
Niagara-on-the-Lake, ON

SMITH, Paul Edward
Ottawa, ON

SPARROW, George Elwood
Scarborough, ON

SPENCE, Robert R.
Huntsville, ON

STEWART, Roy James
Courtenay, BC

STRACHAN, Brian
Bracebridge, ON

SUTHERLAND, Hugh John Brian
Ottawa, ON

THROOP, William James Needham
Belleville, ON

TOSH, George Hartley
Oakville, ON

VACLAVEK, Joseph Victor
Sarnia, ON

WALKER, William Drummond
Fonthill, ON

WESTERHOF, Gerhard Albert
Niagara Falls, ON

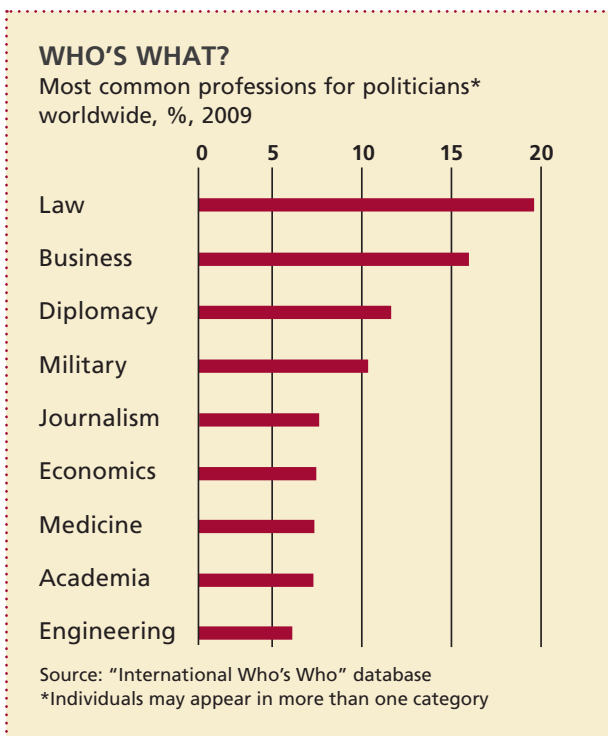
ZAIDI, Syed Athar Husaiz
Calgary, AB

GLOBALLY AWARE, BUT STILL NOT THERE: THE IMPORTANCE OF GETTING MORE ENGINEERS TO ENTER POLITICS

By Jeannette Chau, P.Eng.

WHEN WE THINK of politicians and the professional backgrounds they are likely to have, law and business come to mind. That's not surprising since this is, in fact, the case.

A few years ago, *The Economist* went through a sample of almost 5000 politicians in the *International Who's Who of Professionals* directory to examine their backgrounds. The findings shown in the chart reproduced below appeared in the article "Selection bias in politics: There was a lawyer, an engineer and a politician..." in the magazine's April 16, 2009 issue.



We can see that politicians with backgrounds in law predominate—almost one-fifth have practised in this profession. Business is the second most common profession among politicians worldwide. Economists, academics and doctors also do well in politics. Of the nine professions examined, engineering trails at approximately 7 per cent.

There are currently 107 members of provincial parliament (MPPs) in Ontario. Of these, only three (or 3 per cent) are professional engineers—Phil McNeely, P.Eng., MPP (Ottawa-Orleans), Jack McLaren, P.Eng., MPP (Carleton-Mississippi Mills) and Jim McDonnell, P.Eng., MPP (Stormont-Dundas-Glengarry).

At the federal level, P.Eng. representation is even worse. There are 308 members of parliament (MPs) in Canada, almost three times the number of MPPs in Ontario, yet only five (or 2 per cent) are professional engineers—Cornelio Chisu, P.Eng., MP (Pickering-Scarborough East), Marc Garneau, P.Eng., MP (Westmount-Ville-Marie), Pierre Lemieux, P.Eng., MP (Glengarry-Prescott-Russell), Pierre Poilievre, P.Eng., MP (Nepean-Carleton) and Steven Blaney, ing., MP (Levis-Bellechasse).

Not only are these numbers low, they are much lower than the worldwide number, which is low to begin with.

Why should this be a concern? Because the issues our country and the world face today are increasingly global, complex and technical in nature. They require politicians from various backgrounds to provide differing viewpoints and approaches to deal effectively with them. Engineers have a scientific understanding of the world in which we live, which means they are globally aware, and have an appreciation of how things interact. They are not afraid to deal with policy related to technology. They are able to break down complex issues, are good problem solvers and have evidence-based, decision-making skills.

In Canada, professional engineers are ideally suited for the role of politician. They are trained to examine things in a critical fashion and to base decisions on facts. They are bound by a code of ethics regarding duty of care and protection of the public interest. These are the qualities that we want in today's politician.

At a recent visit to North Bay, Garneau spoke of the need for evidence-based government policy. "The decisions that politicians make affect people's lives and they need to be based on science and fact, not dogma and ideology," he said.

In democracies, lawyers dominate. According to *The Economist*, this isn't surprising, since the law deals with the same types of issues as politics, for example, finding the balance of liberty and security to form a just society. The skills a lawyer has, such as gathering evidence and appealing to juries, transfer well to politics. In new democracies, business people are prevalent as they tend to go into politics to influence the new structures being put in place.

There are certain predispositions by country, as well. Egypt favours academics; South Korea, civil servants; Brazil, doctors; France and Germany, lawyers; Africa, the military; Indonesia, military generals; and China and Russia, engineers. In Britain, many political networks are formed at Oxford and Cambridge universities. Under Vladimir Putin, Russia has an inner circle dating from Putin's time at St. Petersburg and his career in the old KGB.

US President Barack Obama is a lawyer by training. Contrast this to Hu Jintao, the former leader of the Communist Party of China, who was a hydraulic engineer. His predecessor was

an electrical engineer. The current leader of the party, Xi Jinping, trained as a chemical engineer.

The senior body of China's Communist Party is the Politburo Standing Committee. In 2009, its membership was made up of eight engineers and one lawyer. By contrast, the last US president to train as an engineer was Herbert Hoover. There is a prevalence of lawyers in the US ruling elite. Over half of American senators have practised law.

China is emerging as a superpower. Its long-term view and focus on technology—good engineering traits—may give it a global advantage in today's increasingly technical society.

More engineers should consider seeking public office. An engineer's job is to ensure things work, focus on the long term, and ensure public safety. Having politicians with an understanding of regulatory issues and what PEO is trying to accomplish goes a long way in helping to foster the relationships PEO needs with government, and in helping make the best fact-based decisions our country needs. More balance in the viewpoints and backgrounds around the political table will allow for better decision making.

PEO had a desire to have 11 professional engineers elected to the Ontario legislature in the 2011 provincial election. Although 11 ran, only six ran as candidates for parties currently in the legislature. Three were elected.

We need more engineers in the House of Commons and at Queen's Park. What do you think? Σ

Jeannette Chau, P.Eng., is PEO's manager, student and government liaison programs.

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INTRODUCING PEO COUNCIL 2013-2014

EXECUTIVE COMMITTEE



ANNETTE BERGERON, P.ENG., MBA
President

Annette Bergeron holds an honours bachelor of science, material and metallurgical engineering, from Queen's University and a master of business administration from the Schulich School of Business, York University. She has worked as a production engineer at Dofasco Inc.; a lecturer at Queen's faculty of applied science and engineering, and Queen's school of business; director, first-year studies, Queen's engineering; and general manager at Queen's Alma Mater Society (AMS) Inc. She has been a PEO member since 1990. As a volunteer, Bergeron has been a director, Kingston General Hospital, since 2006. She has also twice served as president and chair of the Ontario Society of Professional Engineers. She believes accountability is a fundamental responsibility of leadership and looks forward to working with members to ensure that PEO excels in its regulatory mandate of setting standards and governing conduct. abergeron@peo.on.ca



DENIS DIXON, P.ENG., FEC
Past President

Denis Dixon received his engineering degree in 1961 from Liverpool, UK, and became a P.Eng. in 1966. He has worked in building services design since 1968 and became a registered consulting engineer in 1976 in the United Arab Emirates. He has completed projects in Saudi Arabia, Oman, Pakistan and several Gulf Islands. He has been active on PEO's Brampton Chapter executive since returning in 1989, including serving as chair in 1990, 1996 and 1999. Dixon has also chaired PEO's Audit Committee, the Advisory Committee on Committees, the PEO/OACETT Joint Management Board and the Professional Standards Committee. He has been a member of the Executive, Discipline, Finance, Legislation, Government Liaison, Human Resources and Consulting Engineer Designation committees, as well as the Advisory Committee on Volunteers, the Engineers Canada Presidents Group and such task forces as the 40 Sheppard Task Force, 40 Sheppard Working Group, Building Regulatory Reform Advisory Group (BRRAG), Ontario Hydro Nuclear, Technologist Licensure and Lay Councillors on to Discipline Panels. Dixon was a PEO councillor-at-large from 1999 to 2007 and president for the 2012-2013 term. He is a regular contributor to the PEO forum (<https://forum.peo.on.ca/cgi-bin/yabb/YaBB.pl>) in an attempt to bridge the communication gap between council and the general membership, and is keenly interested in greater member participation in PEO affairs. ddixon@peo.on.ca, ddixon@netrover.com



J. DAVID ADAMS, P.ENG., MBA, FEC
President-elect

David Adams, PEO president, 2008-2009 and 2011-2012, studied arts and science at Carleton University, before earning a BEng in mechanical engineering at McGill University and an MBA in finance and marketing from the University of Western Ontario. Involved extensively in mechanical engineering design and production management, he developed skills in acquisition analysis and business operations. He worked at the National Research Council, in Alberta's oil fields, CIL, Cockshutt, Abitibi and Rio Tinto Zinc (England), and held senior positions with Canadian Gypsum and Massey Ferguson, before acquiring Canada Spool & Bobbin Company. Adams is now president, Maple Leaf Engineering, a consulting firm specializing in lean design and manufacturing processes, infrastructure renewal, wood product manufacturing facilities, sawmill and dry kiln design. He was twice elected a regional councillor and has over 25 years of chapter, committee and task force service. He chaired the Governance Task Force and the Audit and Finance committees. As a member of the Building Committee, he was instrumental in acquiring PEO's headquarters. A past president of the Rotary Club, Adams is president of the local Gideons International and a member of the Fellowship Baptist Church. He was appointed to *Canadian Who's Who* in 1989, *Marquis Who's Who* (US) in 1984 and International Men of Achievement in 1985. daveadams@wightman.ca



THOMAS CHONG, MSC, P.ENG., FEC, PMP
Vice President (elected)

Thomas Chong earned a master's degree in mechanical engineering from University of Strathclyde, Glasgow, Scotland, in 1973. He became a fellow of Engineers Canada in 2011; international project management professional (PMP) in 2009; senior member, American Institute of Industrial Engineers in 1977; Professional Engineers Ontario member in 1976; and a chartered engineer (Britain) in 1974. Chong was recruited from London, England, by Northern Telecom Canada as a corporate engineering manager in 1976. He has been president of a 3000-member network since 2008, and currently works as a senior system lead with the Ministry of Health and Long-term Care. Chong received the Queen Elizabeth II Diamond Jubilee Medal in 2013. Since 2009, he has also won 11 other major awards, including the Amethyst Award in 2009 (highest award in Ontario government). Chong is a mentor, York University Engineering Design Program, 2008 to present, and Chinese Professionals Association of Canada (CPAC), 2008 to present; Knights of Columbus, and lecturer, St. Agnes Tsao Church, 2011 to present; founding member and board executive, Popular Music Club, 2007 to present; and a former board member, Legal Aid Ontario Clinic, 2004 to 2009. Chong was vice president, appointed, PEO 2011-2012; East Central Region councillor, 2006-2013; member, Regional Councillors Committee, 2006-2013; vice-chair, Chapter Leaders Conference, 2006; and director, Communications and Executive, York Chapter, 2000-2008. He is a member of the Repeal of Industrial Exception Task Force, 2011 to present; Audit Committee, 2006 to present; Discipline Committee, 2012 to present; and Government Liaison Program, 2006 to present. Chong has published many technical papers. thomas.chong@rogers.com

[PEO COUNCIL]



SANDRA AUSMA, PHD, P.ENG.

Vice President (appointed)

Sandra Ausma has been a professional engineer since 1989. She is currently employed by the Ontario Ministry of the Environment's Technical Support Section in Sudbury as its air quality expert for the northern region. Ausma has held a variety of

technical and policy positions in consulting, academe and government in Ontario and internationally. She remains active in her community through mentoring youth and internationally trained scientists, judging at science fairs, participating in local and provincial groups that require technical and engineering expertise, leading workplace United Way campaigns, and acting on boards of professional associations. She has been nominated for several awards, including a United Way Toronto Spirit Award in 2010, a Ministry of the Environment Emerald Award in 2011 and an Ontario Public Service Amethyst Team Award in 2013. Ausma is currently active as a member of the Sudbury Chapter executive, the Ontario Society of Professional Engineers through the Women in Engineering Advisory Committee, Clean Air Sudbury, and Women in Science and Engineering (Sudbury). As a PEO councillor, Sandra engages and represents the membership, especially those in northern Ontario, and works with council to the benefit of the profession. sausma@peo.on.ca



ISHWAR BHATIA, MENG, P.ENG.

Ishwar Bhatia completed his BEng at BHU, Indian Institute of Technology (IIT) in 1970, and his MEng (civil) at Dalhousie University in 1972. After working with McNeely and Northland Engineering, Bhatia joined the City of Ottawa in 1974 as head of sewer maintenance. As a senior design and construction

project manager, Bhatia supervised project managers and technologists, conducted environmental assessments, hired consultants, and managed multi-million-dollar complex construction projects. He worked for GENIVAR from May 2009 to June 2011 to set up its municipal group. He is a past president (twice) of the Civic Institute of Professional Personnel of Ottawa and a past president of Ottawa Hindi School. Bhatia continues to serve on PEO council, is the chair of the Audit Committee and the 40 Sheppard Renovation Task Force, and member of the Government Liaison and Discipline committees. ibhatia@peo.on.ca



REBECCA HUANG, LLB, MBA

Rebecca Huang is a litigator at Bennett Jones LLP. She routinely assists corporations and business owners with commercial disputes. Huang is experienced in shareholder disputes, defamation, breach of contract claims, negligence and professional malpractice defense. On March 19, 2008, she was appointed by

the Ontario government as a lieutenant governor-appointed councillor to PEO council for a three-year term. She was reappointed in 2011 for another three-year term. She is honoured to help advance the engineering profession with her legal skills. huangr@bennettjones.com



MICHAEL WESA, P.ENG., FEC

Michael Wesa received his degree in mechanical engineering (co-op) from the University of Waterloo in 1974. The son of an engineer, Wesa had already attended chapter functions with his dad. Shortly after registering in 1976, he became active on the

Lakehead Chapter executive, a role he still maintains today. From 1992 to 1996, he was a Northern Region councillor, and served as the appointed vice president in his final year on council. In 2011, Wesa was elected again as Northern Region councillor. Wesa has contributed to numerous PEO committees over the years, and has served on the Discipline Committee continuously since 1992. He will become chair of this committee in November 2013. Wesa was inducted into the Order of Honour in 2008. His engineering career included professional service with the forestry industry, three consulting engineering firms, and Hydro One (electrical utility). His expertise includes HVAC, power transmission, diesel generation, and mechanical building services. Retired in 2012, Wesa looks forward to more time for travel adventures. He has also volunteered with many community-based organizations in Thunder Bay, including minor hockey (scheduler, newspaper column), symphony orchestra (on board), little league baseball, his church (treasurer), and donating plasma (until the local facility was closed). His other interests include travel, music, theatre and computing. Retired from squash and tennis, he can still bicycle. Wesa married Arlien in 1975, and raised two sons and a daughter. michael@wesa.peo.on.ca

COUNCILLORS

Councillors-at-large



ROYDON FRASER, PHD, P.ENG., FEC

Roydon Fraser received a bachelor's degree in engineering at Queen's University and went on to obtain his master's degree and doctorate in mechanical and aerospace engineering from Princeton University. He joined PEO in 1991, serving on the executive of the Grand River Chapter (formerly the Kitchener-Waterloo and Guelph-Cambridge chapters) starting in 1993, and chairing the chapter in 1996. He continues to lead the organization of Explorations, an evening where the University of Waterloo's faculty of engineering is open to hundreds of grades 6, 7 and 8 students to see and explore the wonders of engineering. Fraser is a member of the Society of Automotive Engineers, the American Society of Mechanical Engineers and the Ontario Society of Professional Engineers, and is a lifetime member of the Sandford Fleming Foundation. He serves on PEO's Academic Requirements and Discipline committees, both since 1999. He is a professor in the mechanical and mechatronics engineering department at the University of Waterloo. rafraser@uwaterloo.ca



BOB DONY, PHD, P.ENG., FIET, FEC

Bob Dony holds BSc and MSc degrees in systems design engineering from the University of Waterloo and a PhD in electrical and computer engineering from McMaster University. He has been a faculty member with the School of Engineering at the University of Guelph since 1997 and currently serves as the associate director of undergraduate studies. Licensed by PEO in 1989, Dony was a member of PEO's Emerging Disciplines Task Group (1997-2002), the Evolution of Engineering Admissions Task Force (2000-2005), and of Engineers Canada's Canadian Engineering Qualifications Board (2001-2004). He was also a program visitor (2000, 2012) and visiting team vice chair (2010) for accreditation visits for Engineers Canada's Canadian Engineering Accreditation Board. He is a past chair of PEO's Academic Requirements Committee (member since 1998) and is currently the chair of the Legislation Committee.

From 2008 to 2011, Dony was co-editor-in-chief, *Canadian Journal of Electrical and Computer Engineering*, Institute of Electrical and Electronics Engineers Canada. He was made a fellow, Institution of Engineering and Technology (FIET), in 2005 and a fellow of Engineers Canada (FEC) in 2009. bdony@peo.on.ca



ROGER JONES, P.ENG., MBA, SMIEEE

Educated at Imperial College in London, England (BSc, DIC, M.Phil), and McGill University, Montreal (MBA), Roger Jones retired from George Kelk Corporation as vice president and chief engineer. His extensive career covered many engineering roles from development engineer to senior management at several major firms, including Ferranti (UK aerospace), GEC Limited (UK), Foxboro Canada, Cowan-Lavelin and Noranda Inc. Jones has published over 35 technical papers. He is a life/senior member of the IEEE. A vintage radio and aviation enthusiast, Jones is a member of the Ontario Vintage Radio Association and the Canadian Warplane Heritage Museum. Until it moved from Downsview, he volunteered at the Canadian Air & Space Museum, restoring the vintage communications receiver and crew "interphone" for the Lancaster bomber exhibit. Jones has served PEO on several committees: council (2010-2012), Finance, Professional Standards (PSC) and the Emerging Disciplines Task Force (EDTF). He still serves on PSC, and chairs its new Professional Standards Industry Subcommittee, and sits on both the Nanotechnology and Molecular Engineering and Communications Infrastructure Engineering subcommittees of EDTF. He is also a board member of PEO's Foundation for Education. For the local community, he serves on the Thornhill Festival Committee and is a board member of Heintzman House, a historic building and community centre in Thornhill. With a long-time interest in Canadian and worldwide economics, Jones was a member of a Queen's Park Economy Political Action Committee and in 2012 wrote its *Report on Industry* in Ontario. He is also an original member of the Society of Manufacturing Engineers' "Take Back Manufacturing" forum. rjones@peo.on.ca

Regional councillors

EASTERN REGION COUNCILLORS



CHRIS TAYLOR, MENG, P.ENG., MBA

Chris is a senior product manager at Entrust in Ottawa. His current assignment is managing the Entrust IdentityGuard product portfolio globally targeted at large financial institutions, government agencies and Fortune 500 enterprises committed to identity assurance. Graduating from the University of Ottawa with a BSc (mechanical engineering) in 1989, he obtained his MEng (systems engineering) in 1993 and MBA in 1996. Taylor has provided his expertise to a number of well-known global high-tech companies in Ottawa: Entrust, Avaya, Nortel, Mitel and start-up Validian. Taylor has been active in PEO's Ottawa Chapter since 1990, and is in his second term as Eastern Region councillor. As a member of PEO, he has been particularly involved in education outreach, government liaison and serving on council. He is also actively involved in the community, coaching minor hockey for the Kanata Minor Hockey Association. He enjoys playing sports, including hockey, tennis, skiing and cycling. He is married and the proud father of two young boys. Taylor is a person who is highly committed to his endeavours. ctaylor@peo.on.ca



DAVID BROWN, P.ENG., BDS, C.E.T.

Dave Brown is a fifth-generation Canadian citizen born in Cornwall, Ontario, in 1961. He lived in various parts of Ontario throughout his life before settling in the Belleville area in 1983. Brown holds a diploma in civil engineering technology from St. Clair College of Applied Arts and Technology and a bachelor of applied science in civil engineering from Queen's University. He is a practising structural engineer and has specialized in the design/build construction of ICI facilities for over 30 years and is a principal of TaskForce Engineering Inc. since its inception in 1994. Brown is a member of PEO, the Ontario Society of Professional Engineers, Canadian Society for Civil Engineering, and Ontario Association of Certified Engineering Technicians and Technologists. He is happily married to his wife Liza and has four wonderful children. dbrown@peo.on.ca

EAST CENTRAL REGION COUNCILLORS



DENIS CARLOS, MBA, P.ENG., FEC

Denis Carlos received his bachelor's degree in electrical engineering from Ryerson and MBA from York University. As a project manager with GENIVAR, he successfully manages the construction of museum, school and sports facilities. He has broad working experience in several fields: project manager, professor, senior forensic scientist, systems engineer, systems officer, information systems manager, development analyst, seismic network designer and computer consultant. After joining PEO in 1990, he volunteered at his local chapter, holding every position on the executive, including chair. He continues to have a keen interest in the operation of several local chapters. Carlos has also volunteered as a board member of Transnational and Diaspora Network for Development Canada, a tutor for adult basic literacy, and a counsellor and board member of the charity Coping in Tough Times. Carlos' work has been recognized with awards, including a fellowship from Engineers Canada for noteworthy service to the engineering profession, the Ontario Volunteer Service Award, PEO's certificate of appreciation for serving the engineering profession, a Chinese Professionals Association of Canada certificate, and awards from Teleglobe Canada and Marr Electric. Carlos is committed to the engineering profession and is eager to give members a greater opportunity to improve the operation of PEO. He believes in representing the views of all engineers and asks that members send him their ideas on any issue. web: solrac.ca/carlos carlos.qc9z@ncf.ca



CHANGIZ SADR, P.ENG., FEC, CTP, CTME, ITILv3

Since becoming licensed in 1999, Changiz Sadr has been an influential member of the Willowdale-Thornhill Chapter. Sadr joined the chapter executive in 2000, and under his leadership as chair (2009-2011), the chapter underwent tremendous growth, including the development of a scholarship program for students pursuing engineering, networking events for engineering interns and the staging of two chapter events each month, on average. Sadr was also involved on several PEO committees, including the Emerging Disciplines Task Force (2008-2011) and an Advisory Committee on Volunteers subcommittee (2010). He has been a member of the Experience Requirements Committee since 2003. Sadr has volunteered his time as a mentor and coach to settlement agencies and community associations to assist newcomer engineers and professionals in adapting to their new environment. This involvement has increased awareness among international engineering graduates of PEO and the licensure process. As a result of his work, he received two Ontario Volunteer Service Awards in 2009. Sadr has also served as a face for the profession, representing PEO as a general visitor on several accreditation visits for the Canadian Engineering Accreditation Board since 2007. Sadr received the PEO Order of Honour Award in 2011 and his third Ontario Volunteer Service Award in 2012 for serving PEO and the engineering profession, summing up his voluntary contributions to over 25 years in total. csadr@peo.on.ca

NORTHERN REGION COUNCILLORS

MICHAEL WESA, P.ENG., FEC

(see Executive Committee)

SANDRA AUSMA, PHD, P.ENG.

(see Executive Committee)

WESTERN REGION COUNCILLORS



LEN C. KING, P.ENG.

After earning his BEng in civil engineering from McMaster University in 1972, Len King began a career in the building sector spanning over 25 years. King was chief plan examiner and deputy building commissioner, building department, City of Hamilton from 1975 to 1989. He became building commissioner in the same department in 1989 and retired from the post in 1999. He has been a consultant with NAL Engineering since his retirement. Licensed since 1974, King was treasurer of the Brantford Chapter from 2000 to 2004 and chair from 2004 to 2006. Over the years, he has had numerous professional affiliations: vice chair, Ontario Building Code Commission (2000-2006); vice president and director, Ontario Building Officials Association (1984-1991); member, National Building Code's Standing Committee on Structural Design (1985-1994); member, Engineers, Architects and Building Officials Committee (1987-1993); director, Building Officials and Code Administrators International, Chicago (1990-1996); member, Underwriters Laboratories of Canada's fire council (1989-2000); member of several CSA committees; member, National Fire Protection Association (1989-1999). He has also served on council since 2008 as Western Region councillor. lking@peo.on.ca



EWALD KUCZERA, MSC, P.ENG.

Ewald Kuczera graduated from Queen's University in 1976 with an honours bachelor of science degree in civil engineering. Having worked for two summers in the signals and communications branch in Ottawa-Carleton, he began his full-time career as traffic engineer for the City of Cornwall in 1978, and two years later completed his master of science (Eng.) civil engineering from the School of Graduate Studies and Research at Queen's. From 1985 until 1993 he held the position of deputy works administrator, engineering with the then Township of Kingston during a period of rapid growth and went on to become director of physical services (county engineer) for neighbouring Lennox & Addington County. As a consequence of amalgamations, he accepted his current posting of director of public works for the Town of Niagara-on-the-Lake in 1998. At the start of his career, he was on the executive of the Eastern Chapter (since renamed). He chaired the Resolutions Committee of the Ontario Traffic Conference in the early '80s and has been an active member of the Municipal Engineers Association since obtaining his professional designation. He and his wife of 35 years, Wanda Gora, have three grown children and five grandchildren. He is passionate about his religious faith, his family's heritage and his calling to the profession. He served as Warden for Camp #3, Ritual of the Calling of an Engineer for more than a decade, ending with his move to Niagara. He feels honoured to now serve the association. ekuczera@peo.on.ca

WEST CENTRAL REGION COUNCILLORS



DANNY CHUI, P.ENG., FEC

Danny Chui received a BSc in civil engineering from the University of Calgary in 1984. He is manager of capital works for Toronto's Exhibition Place. As such, he was a member of the owner project implementation team for the National Trade Centre (known as the Direct Energy Centre), Ricoh Coliseum, BMO

Field and Allstream Centre, including undertaking many innovative energy projects. He recently completed on time and within budget the Infrastructure Stimulus Fund's \$27.3-million program in a year and a half for Exhibition Place, for which he received a commendation from his board. Chui was a member of PEO's Mississauga Chapter executive from 1984 to 1999, as chair, vice chair and secretary, and served on PEO council as a councillor for the West Central Region from 1994 to 2000. While on council, he served on various committees, including the Executive Committee as the appointed vice president, and Finance Committee, which he chaired. He received PEO's Order of Honour in 2002, and was made a fellow of Engineers Canada (FEC) in 2009. Chui is a past member of the Association of Professional Engineers and Geoscientists of Alberta, American Society of Civil Engineers, Alberta Association of Engineering Technologists, Ontario Association of Certified Engineering Technicians and Technologists, and the Mississauga Public Library board. He is past chair, Ontario Construction User Council, on which he's served since 1996. dchui@peo.on.ca



ROBERT WILLSON, P.ENG.

Robert Willson is a senior project engineering manager with over 35 years of experience and expertise in project management and engineering. He holds an MASc in human factors engineering and a BASc in industrial engineering, both from the University of Toronto, and is manager of engineering of the Transmission and Distribution Group, Tetra Tech Canada WEI Inc. in Mississauga. During his career, Willson has undertaken administrative and leadership roles in a variety of projects involving instrumentation and automation, human factors, utilities and power, polymers, and water and wastewater, and has managed multi-discipline teams of engineers and designers. His work experience has involved working in manufacturing, electrical utility and engineering consulting companies, such as Ontario Hydro, Shaw Energy and Chemicals Canada, SNC-Lavalin and CH2M Hill. He serves on PEO's Finance (as chair), Discipline, Regional Councillors, West Central Region Search and Election, and Chapter Leaders Conference committees. rwilson@peo.on.ca

Appointed councillors

ISHWAR BHATIA, MENG, P.ENG.

(see Executive Committee)



SANTOSH GUPTA, PHD, MENG, P.ENG., FEC

Santosh Gupta earned a bachelor of science (engineering) in 1961 and a master of engineering in 1962. He obtained a PhD from the University of Waterloo in 1974 and became a member of PEO in 1976. Gupta worked for Hydro One/Ontario Hydro in several management and professional engineering positions

from 1981 to 2000. Prior to this, he worked in Montreal, Kenya and India on a variety of engineering projects and as a professor. Currently, Gupta serves on PEO's Experience Requirements Committee (ERC) as chair, the Finance and Discipline committees, the National Licensure Framework Task Force, the Academic Requirements Committee/ERC sub-committee and on the Ontario Society of Professional Engineers Chapter Liaison Committee. He is also the executive secretary of the Council of Ontario Deans of Engineering, and participates on Canadian Engineering Accreditation Board engineering program accreditation teams at Ontario universities. Gupta served on PEO's Professional Engineers Awards Committee until December 2011. Prior to his current appointment to PEO council by the lieutenant governor of Ontario, Gupta sat on council as East Central Region councillor for two years and was vice chair of the Scarborough Chapter for two years. sgupta@peo.on.ca



RICHARD J. HILTON, P.ENG.

Rick Hilton worked for over 30 years in the Canadian mining industry, mostly in the environment, health and safety (EHS) area. In his job, he travelled to many parts of the world to deal with operational and governmental issues. He has been on the cusp of the development of forward-thinking

EHS programs and legislation. Hilton retired from full-time work in 2005. He is now a part-time consultant in environment, health and safety. rhilton@peo.on.ca

REBECCA HUANG, LLB, MBA

(see Executive Committee)



VASSILIOS (BILL) KOSSTA

Bill Kossta graduated with a bachelor of administrative studies from York University and a business administration, marketing management, diploma from Centennial College. He has 35 years of sales and management experience with leading companies in consumer packaged goods, including Seagram Company distillers, Carling O'Keefe Breweries, Molson Breweries and Great Lakes Brewing Company. He is sales manager at Cool Beer Brewing Company in Toronto. Kossta was appointed to PEO council in November 2006 and is a member of the Complaints, Registration, Audit and Legislation committees. vkossta@peo.on.ca



JAMES K.W. LEE, PHD, P.ENG., FEC

James Lee has been a lieutenant governor-appointed councillor since 2005. He graduated from Queen's University with a BSc in geological engineering, and earned an MA and PhD from Princeton University. He is a professor of geology and geological engineering at Queen's University, where he also serves as vice-provost (international). He has been a member of PEO's Academic Requirements Committee since 1999 and is a past chair. In addition, he was a member of PEO's Executive Committee in 2006 and is also a member of the Licensing Process Task Force, Discipline Committee, and Legislation Committee. Nationally, he serves as a national examiner for the Canadian Engineering Qualifications Board and, since July 2008, he has also been a member of the Canadian Engineering Accreditation Board, representing PEO on the national body responsible for the accreditation of all university engineering programs across the country. jlee@peo.on.ca

PEO COUNCIL



MARY LONG-IRWIN

Mary Long-Irwin is the executive director of Northern Ontario Angels, an organization that matches entrepreneurs with investors. Prior to this, she was the president/CEO of the Thunder Bay Chamber of Commerce for 10 years. She worked closely with member businesses and three levels of government to ensure the growth of business and economic development opportunities throughout northwestern Ontario. She was also the CEO for the Northwestern Ontario Associated Chambers of Commerce. Long-Irwin began her career as a self-employed businesswoman in Thunder Bay. In 1988, she accepted a position with Confederation College, Northwest Enterprise Centre, as a small business advisor and instructor. In 1990, she joined Superior North Community Futures Development Corporation (a FedNor community development initiative) as the general manager, lender and business consultant to over 500 businesses and continued in the position for 10 years. Born, raised and educated in Thunder Bay, she continues to provide business advisory services and remains a strong advocate for business and industry. Long-Irwin continues to serve on many boards and non-profit organizations and is active in her community. Past president of the Cystic Fibrosis Foundation, she is involved with fundraising, awareness, public speaking and education for many non-profit and charitable organizations. mirwin@peo.on.ca



SHARON REID, C.TECH

Sharon Reid graduated from the electronics engineering technician program at Fleming College. She is employed as a senior lab technician at Canadian Instrument Services Group, Peterborough, where her responsibilities include the calibration and verification of electronic and electromechanical test equipment, maintenance of medical equipment, and assistance with acceptance and efficiency testing of hydro generators in Canada and abroad. Reid's community service has included work with Girl Guides of Canada, regional science fairs, the Canada-wide Science Fair, Engineering Week activities, and over a decade of involvement with the Ontario Association of Certified Engineering Technicians and Technologists (OACETT). Reid is a certified member of OACETT and has served OACETT as chapter director, regional secretary/treasurer and Eastern Region councillor. She was also a delegate to the OACETT Technology Exchange in China in 2008. Reid serves on PEO's Equity and Diversity and Discipline committees. sreid@peo.on.ca



CHRIS D. RONEY, P.ENG., BDS, FEC

Chris Roney holds an honours BSc degree in civil engineering from Queen's University. A third-generation engineer, he heads Roney Engineering Limited, a Kingston consulting firm offering a full range of structural engineering services related to building design and construction, investigations and restorations. Roney is a practising structural engineer, and is accredited as a building design specialist and consulting engineer. He is chair of the Part 4 (structural) Technical Advisory Committee for the Ontario Building Code 2012, and is a member of the Ministry of Municipal Affairs and Housing's Building Advisory Council. He was Eastern Region councillor from 1998 to 2000 and elected vice president of PEO from 2000 to 2001. He has served on numerous PEO committees and task forces, including Finance, Audit, Complaints, Communications, Enforcement, Executive, PEO-OAA Joint Liaison, PEO-OACETT Joint Management Board, PEO-OSPE Joint Review Board, BRRAG (Bill 124) Task Group, C of A Task Group, Consulting Engineer Designation Committee (Liaison), Strategic Planning Steering Committee, and others. Roney is a director on the board of Engineers Canada, where he has served on the Executive Committee, Finance Committee, the Canadian Engineering Accreditation Board, Labour Market Study Steering Committee, Communications Committee,

National Campaign Committee, and chairs the International Committee. Roney is a warden with the Corporation of the Seven Wardens and with Camp #3 of the Ritual of the Calling of an Engineer. croney@peo.on.ca



TARSEM LAL SHARMA, PHD, P.ENG.

Tarsem Sharma graduated with a bachelor's degree in electrical engineering from Punjab University (GNEC Ludhiana), India, in 1974. He obtained his MSc degree in electrical power and his PhD in high voltage from the University of Strathclyde, Glasgow, Scotland, in 1979 and 1986, respectively. He worked in various organizations and gained experience in consulting engineering, short circuit testing of HV switchgear, power distribution and aerospace systems engineering. At present, Sharma is working as a professor in the electrical engineering department at Humber College's Institute of Technology and Advanced Learning. He is also serving as a councillor on the academic council at Humber College. He also had an appointment on the board of examiners at the Ontario Association of Certified Engineering Technicians and Technologists. tlsharma@peo.on.ca, tarsem.sharma@humber.ca



RAKESH SHREEWASTAV, P.ENG., AVS, FEC

Rakesh Shreewastav obtained his MSc degree in civil engineering from Moscow State University, Russia, and works for the Ministry of Transportation's (MTO) Windsor Border Initiatives Implementation Group in London. Previously, he worked for MTO's northeastern region, Ontario Power Generation, and multi-disciplinary engineering companies and government sectors in Russia and Nepal. Shreewastav has actively participated on several PEO chapter committees, Conference for Internationally Educated Professionals engineering panels, and has been involved in other professional organizations, such as the Ontario Society of Professional Engineers, the Canadian Society for Civil Engineering, the Canadian Society of Value Analysis and Value Society (SAVE) International. Dedicated to science awareness and community involvement, Shreewastav has served on judging panels in FIRST Robotics Canada competitions and regional science fairs and also served on the board of directors of the Rotary Club of Nipissing and London South. Shreewastav was selected among thousands as one of 17 people in Canada to be featured on the video vignette Potential to Prosperity, a project sponsored by the Canadian Foundation for Economic Education. Shreewastav is also a member of PEO's Discipline and Equity and Diversity committees, and a past member of the Sustaining the Ontario Centre for Engineering and Public Policy Task Force. rshreewastav@peo.on.ca



MARTHA STAUCH, Med

Martha Stauch retired in 2000 from her career as a language educator. She holds a bachelor of arts degree from Queen's University, a diploma in education from the University of Western Ontario, and a master of education degree from the University of Toronto. Stauch serves on PEO's Human Resources, Discipline and Registration committees and acts as council liaison for the Education Committee. Stauch has served as a member of the Canada Pension Plan Tribunal and in several capacities with St. Mary's General Hospital. Her positions included president of the Volunteer Association, member of the board of trustees and member of the Festival of Trees Steering Committee. She has been active on the K-W Rogers Oktoberfest Women of the Year Committee and is a volunteer with the Canadian Exchange Foundation. mstauch@peo.on.ca

GAINING ECONOMIC VALUE OUT OF INNOVATION

By Sorin Cohn, PhD, MEng, P.Eng.



ONTARIO CENTRE
FOR ENGINEERING
AND PUBLIC POLICY

WHEN BUSINESS and public policy conversations turn to Canada's underperforming economy, a finger is often pointed at Canada's so-called innovation gap. Some individuals and organizations contend, however, that Canada suffers from a gap in commercialization, not innovation. To get perspective on the issue, the Canadian Advanced Technology Alliance (CATA), Canada's largest high-tech association, conducted a major study in 2011. Unlike many

earlier studies that dealt with innovation and its role in research, the CATA study, titled *Effective Commercialization of Innovations in Canada*, focused on the commercialization activities of Canadian companies and impediments to their market success.

CATA surveyed more than 1000 Canadian executives and conducted comprehensive follow-up roundtable discussions across the country. Universities, major Canadian industry associations and a number of federal and provincial organizations were partners in the study. This article focuses on the main findings of the study and the roundtable talks.

DEFINING COMMERCIALIZATION AND INNOVATION

Commercialization of innovations was defined as the process of generating greater wealth for individuals, businesses and/or society at large in exchange for new or improved products, processes or services.

Innovation, on the other hand, is a means to an end; it plays a crucial role in creating a competitive business advantage pertaining to:

- the desirability and affordability of products and services;
- the effectiveness of interactions with the market (environment);
- the efficiency of internal and external operations;
- a culture of leadership, which defends it against stagnation and death; and
- luck.

DEFINING THE GAP

The CATA study highlighted four main factors of the commercialization gap:

1. A lack of commercialization expertise and business management acumen handicaps companies that do not have adequate markets at home and therefore must look outside Canada's borders;
2. A weak culture of collaboration exacerbates the difficulties of operating in a global marketplace dominated by strong competitors;
3. Insufficient capitalization and funding for commercialization make companies easy prey for foreign companies, sending the benefits of Canadian innovations and high-value jobs abroad; and
4. A lack of competitive drive and strength prevents companies from succeeding in fiercely competitive world markets.

Small and medium enterprises (SMEs), which comprise more than 99.5 per cent of Canadian companies, are most affected by these factors.

A chief finding of the study and roundtable discussions is that Canadian industry excels globally when SME executives focus first and foremost on customers and competitiveness. For instance, targeting marketing and sales in advance and collaborating with the right partners, including those with financial and strategic business development support, often leads to success. As the management firm Booz & Company demonstrated in *Why Culture is Key*, its 2011 innovation study, "spending more on R&D won't drive results. The most crucial factors are strategic alignment and a culture that supports innovation."

To manage business innovation properly, all aspects of the innovation value chain must be addressed. These include idea generation and acquisition, innovation development and "productization," and commercialization. While research enables the transformation of money into knowledge, the process of commercialization materializes the value of innovation. In effect, commercialization transforms knowledge and a company's products or services into money.

Let's now examine the four aspects of the commercialization gap in more detail.

1. Lack of commercialization expertise

The CATA study showed that Canadian industry lacks commercialization expertise, a spirit of business competitiveness and global market connectivity. For example, 44 per cent of the companies said they failed to commercialize some aspect of their innovations, while 56 per cent had not completed—nor proven successful in—the commercialization of other innovations.

Next to financing, the main obstacles to commercialization are related to the state of commercialization and business management expertise. The obstacles include insufficient marketing and marketing expertise, lack of qualified commercialization personnel, uncertain market demand, poor market knowledge, inappropriate

[POLICY ENGAGEMENT]

customer targeting, and lack of sales expertise. Similarly, channel-to-market issues like difficulty finding commercialization partners and market (sales) channel issues all reflect the immaturity of many Canadian companies and how they commercialize their innovations.

The factors that governments pay attention to—trade tariffs, taxation obstacles, and legal or administrative obstacles in Canada or abroad—appear to play a lesser role than commercialization expertise.

Astoundingly, 17 per cent of the companies surveyed had not commercialized any innovation over the last five years. They cited poor marketing and selling abilities and a sustained lack of funding. Unless these companies sell unchangeable commodities, how can they survive?

2. Weak culture of collaboration

The scientific-technical and business knowledge accumulated to date, the need for higher specialization, anytime-anywhere access to information, and market globalization have led industry to evolve from an integrated product paradigm to a knowledge services economy. As a result, the name of the game has shifted from direct cost control to collaborative value creation in communities of interest.

A company needs expertise to succeed: industry and technology knowledge, management and operations capabilities, and access to target markets. SMEs need to complement their internal expertise with that of their business partners. In this context, it is surprising to find that more than half the companies in Canada do not have any form of co-operative agreement, unwisely thinking that they can succeed by themselves.

The weak state of collaboration for commercialization is reflected in the poor use by Canadian companies of lead customers and, especially, anchor companies. Indeed, only about 42 per cent of the Canadian companies surveyed take advantage of lead customers (customers that help define and develop a product good enough to be purchased earlier than the rest of the market) and fewer than 20 per cent of companies enjoy the benefits of working through anchor companies (large companies with a cluster of small companies that take advantage of its commercialization and technical capabilities).

The reality is more troubling. Fewer than 30 per cent of the 20 per cent of companies using anchor companies do so to distribute products or services. Most of these companies focus on product or service development, rather than market success.

3. Insufficient capitalization to survive and prosper

Canadian industry, especially SMEs, lack adequate funding. Fewer than 36 per cent of the Canadian companies surveyed reach their funding targets for commercialization. Their low level of capitalization renders them uncompetitive and unsustainable local players. As a result, they become easy targets for foreign takeover, forfeiting the benefits of their innovations.

In addition, the companies studied take on average 1.5 times longer to commercialize an innovation to the point of recouping costs than to develop an idea into a market-ready product or service. As a result, the total time from concept to a break-even commercialization point is typically between four and seven years.

Many SMEs are run by scientists and engineers enamoured of their innovations. These individuals tend to focus company funds and expertise on perfecting the innovations while expecting commercialization to be quick, straightforward and affordable.

A majority of these companies fail not because they lack product or technology innovation, but because they lack the expertise and financial means to commercialize their innovations before they exhaust all their funding.

4. Lack of Canadian competitive drive and strengths

Using a self-assessment tool, corporate leaders rated their companies against their main competitors on 21 factors, including cost of developing technology, competitor knowledge, business partners and customer support.

While the companies were shown to have good technology and products or services, they lack marketing and sufficient channels to customers, which results in low revenues and poor financial health. This state of non-competitiveness led Stephen Hurwitz, an American investment lawyer, to state the obvious in the paper *Beyond R&D: Canada's Commercialization Challenge and How to Meet It* (www.choate.com/media/pnc/0/media.3040.pdf): “The Canadian government’s support for R&D of its emerging technology companies has become, in effect, a subsidy to US businesses, which acquire the most promising of these capital-starved but R&D-rich Canadian companies cheaply, then reap the financial rewards by commercializing that R&D and bringing those companies to industry leadership.

“Worse still, these companies are often moved to the US, resulting in the loss of Canadian jobs, revenues and exports. The bottom line: Canada is losing much of the benefit of its billions of dollars in R&D funding for its emerging technology companies.”

MOVING FORWARD: ENHANCING CANADIAN COMPETITIVENESS

While the CATA study uncovered significant weaknesses in Canadian industry, the regional roundtable discussions produced several ideas to enhance competitiveness. According to industry executives, Canadian industry, especially SMEs, need to:

- (a) build strategic alignments—plan, structure, invest and act comprehensively as per company drive, be it “built-to-flip” or “built-to-lead”;
- (b) focus strategically on customers and competitiveness—ensures that their

companies are well-positioned and ready to commercialize innovations even before they are ready for market;

- (c) target marketing and sales in advance—as time in the market is crucial and any time lost has dire consequences. Treating the customer as “king” and getting the right customers takes considerable know-how and resources, so companies should have business development, marketing and commercialization experts who understand what customers want, need and are ready to buy. Alternately, companies can seek partners with these strengths;
- (d) collaborate to conquer—corporate leaders must understand that global success requires partnerships with established local players who can act fast and decisively to produce tangible results; and
- (e) go for the smart money—industry executives should integrate financial and strategic support by enlisting investors who can connect them with valuable business partners and strong market channels.

IDEAS FOR GOVERNMENT

If Canadian industry is to be more successful, provincial and federal governments must accept that supporting scientific research and exploratory development is necessary but it is not sufficient. Corporate failure usually results from poor business management, low commercialization and poor market connectivity. Companies also need ample financial resources to develop products and build channels to market.

One of the most crucial roles of government is creating a business-friendly environment—one that offers an enabling regulatory system, a culture of business leadership, and capabilities for scientific and technology developments. Equally important are sound business management, commercial expertise, adequate risk capital and financial support for global success.

Ideas for provincial government

Provincial government also helps build and maintain an environment of industrial success. With a responsibility for education, provincial government can create the expertise to enable local industry to succeed economically and socially.

- (a) educate for business success—courses on business management, marketing, customer relations, project management and financial management should be compulsory for all science and technology students at the university and college level. Policies and programs should encourage university and college students to learn about industry and gain work experience while they are in school. A culture of value-creation and business success should be instilled in primary and high schools, as this is a critical time to acquire core competencies and skills;
- (b) act as community catalyst—provincial governments are well positioned to understand the needs of local companies and can act as catalysts for their market success by:
 - providing tax treatment conducive to commercialization success in key industries. This would allow large companies registered in the province to act as anchor companies for SMEs,
 - creating an effective venture capital and angel environment to encourage private investors to participate more actively in promoting success in their provinces, and
 - participating directly in commercialization of local innovation by strategic purchases that reference customer values to local industry; and
- (c) targeted marketing outside the province—provincial governments could help local companies market their innovations outside the province in a strategic fashion, taking advantage of the capabilities offered by the federal government.

Ideas for federal government and agencies

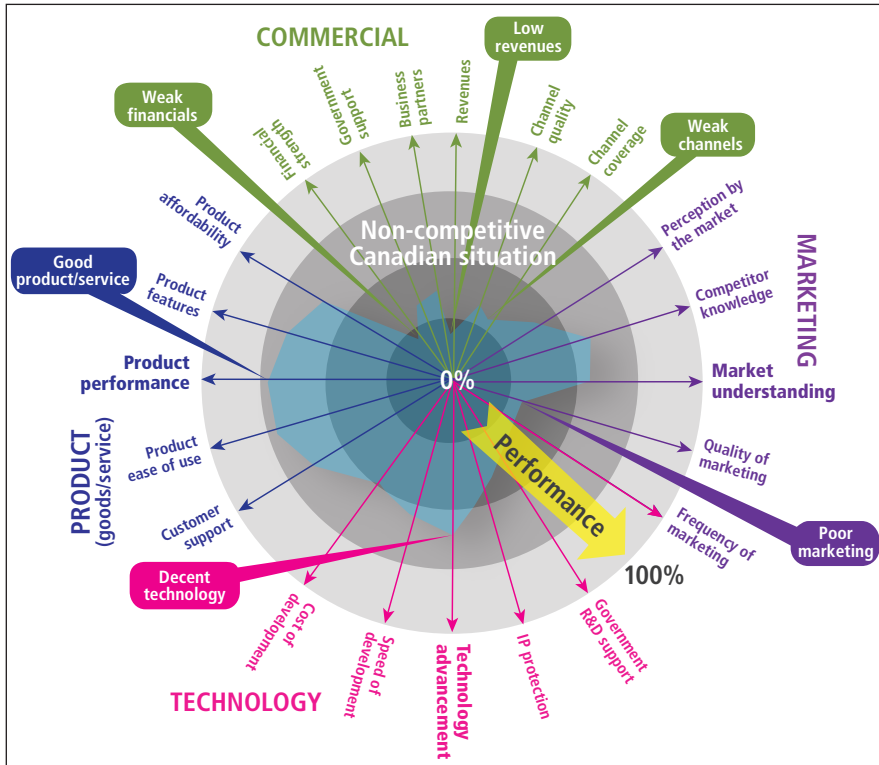
The federal government can set policies and programs that encourage the success of Canadian industry at home and abroad. Participants in the roundtable debates underlined the need for federal government support for a comprehensive structure of agencies, policies and programs to foster global competitiveness, rather than focus narrowly on research and development.

To help Canadian industry compete internationally, the federal government must support competitiveness in all domains critical to global business success. These include financial strength, business and commercial capabilities, and product and technology capabilities.

The main priorities should be to:

- (a) revitalize the Canadian risk capital industry by creating an effective finance system able to help Canadian industry compete and grow globally. This could be accomplished by developing angel investor networks to help entrepreneurs jump-start, develop and innovate their companies, and fostering a self-sustaining private venture capital industry by creating a fund of funds program with the financial strength, investment management and global connectedness to successfully commercialize the research and innovations of Canada’s emerging technology companies. The Business Development Bank of Canada’s role could be enhanced by developing a sound financing system that emulates the “smart money” values of successful American and European venture capital funds. And Export Development Canada could work more effectively with SMEs and service-oriented companies;
- (b) adjust scientific research and exploratory development to support business and reduce waste:
 - include exploratory technology developments as well as commercially oriented innovations in the tax credit program, and

[POLICY ENGAGEMENT]



A competitive guidance tool for an average Canadian company

- end retrospective claims and apply the \$1 billion in savings to help support valued and underfunded programs;
- (c) support SMEs directly via a commercialization research and preparedness assistance (CRPA) program. Most Canadian companies that fail or fall victim to cheap foreign takeovers were not prepared to commercialize their products competitively. A CRPA program could be structured like the Industrial Research Assistance Program (IRAP), while helping SMEs in the pre-commercialization phase to innovate commercial aspects and prepare to compete globally;
- (d) expand strategic government procurement of Canadian innovations. The Canadian Innovation Commercialization Program (CICP) helps Canadian companies by purchasing pre-commercial, Canadian-made innovations. CICP can be enhanced by addressing present and future needs of government organizations as opportunities for further Canadian innovations. CICP must evolve to provide Canadian companies with much-needed first “reference customers” attestation via “user-case study” documents;
- (e) enable a synergistic collaborative environment for industry success. Commercialization-oriented collaboration should be encouraged as much as traditionally supported technical collaborations. The federal government could provide incentives for companies to act as anchor companies for Canadian SMEs, while encouraging more SMEs to cluster around large anchor companies with good reach into world markets;
- (f) support protection and exploration of Canadian intellectual property. Tax-based incentives could help Canadian companies apply for patents, trademarks and brand registrations, thereby protecting their intellectual property;
- (g) support R&D by expanding strategic industrial initiatives. As one of the best-structured and valued federal initiatives, IRAP needs adequate funds to

effectively support Canadian SME technology developments. The federal government could emulate competitive countries by focusing on more applied research and directly supporting strategic industrial initiatives;

- (h) enhance economic value of academic research. A higher proportion of collaboration with industry and insistence on lead customer commitments for a higher percentage of academic research is required; and
- (i) establish a federal government approach to innovation support that is effective, co-ordinated, comprehensive and accountable to industry. Canada has the natural resources, human capital and innovative spirit to develop world-scale industrial successes, provided associated linkages between academe and industry use a strategic approach.

Such a federal innovation structure can succeed only when it is empowered and held accountable. It must also be industry-oriented, flexible and agile enough to respond to global market trends via adjustments to funding mechanisms.

CONCLUSIONS

To address Canada’s commercialization gap, industry leaders and government policy-makers must understand the issues of each industry sector, the appropriate methodologies to manage the innovation process, and the best ways to commercialize each sector’s innovations. Studies should be undertaken to investigate critical aspects of commercialization activities particular to priority industry sectors, and determine policies and programs that could reduce major obstacles to effective commercialization. Σ

Sorin Cohn, PhD, MEng, P.Eng., is president of BD COHNsulting and chief program officer of i-Canada.

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 A MEMBER of the Association of Professional Engineers of Ontario.

This matter came on for hearing before a panel of the Discipline Committee on November 5, 2012, at the Association of Professional Engineers of Ontario (PEO or association) in Toronto. All parties were present. The association was represented by Leah Price. The member was represented by Donald G. Kidd. David P. Jacobs acted as independent legal counsel.

The Notice of Hearing issued on June 21, 2012, and Statement of Allegations dated March 27, 2012, were filed with the panel. There was no issue as to the panel's jurisdiction to determine this matter, which had been referred to the Discipline Committee for disposition. The parties filed an Agreed Statement of Facts signed by the member and counsel for the association.

The member, through his counsel, admitted the conduct alleged as set out in the Agreed Statement of Facts. The panel then conducted a plea inquiry and was satisfied that the member's admissions were voluntary, informed and unequivocal. The parties submitted that the agreed-upon facts as presented supported the allegations that the member had committed acts of professional misconduct as defined under section 28(2)(a) of the *Professional Engineers Act* (act), and sections 72(2) (a), (b), (c), (d), (g) and, in part, (j) of Regulation 941 and in consequence of his contravention of section 53 of the regulation and section 12 of the act.

SUMMARY OF THE MATTER

The member offered an opinion in writing over his signature as a P.Eng. on a matter of public safety that he knew was not substantiated by proper inspection or investigation, and that he ought to have anticipated would be used in a dispute between a relative and a municipal building department.

While he issued the letter without compensation as a personal favour to his relative, in so doing he placed the interest of his family ahead of his professional duty to protect the public and to uphold the integrity of the profession. For this, he was found guilty of professional misconduct by a discipline panel of his peers, and was reprimanded. In recognition of (i) the member's previously unblemished record, (ii) his retirement from the practice of professional engineering, (iii) his co-operation with PEO in presenting an agreed statement of facts and a joint submission on penalty, (iv) his genuine remorse, and (v) the embarrassment and stress he has already experienced in being brought to discipline, the panel agreed to publish its decision and reasons without the member's name and other identifying detail.

PENALTY SUBMISSIONS

The parties filed a Joint Submission on Penalty, which read as follows:

1. Pursuant to s. 28(4)(f) of the act, the member shall be orally reprimanded and the fact of the reprimand shall be recorded on the register for a period of one year;
2. The member shall provide an undertaking to the Discipline Committee, in accordance with subsection 28(4)(c) of the act, not to carry out any work in the practice of professional engineering;
3. There shall be no order with respect to costs;
4. Pursuant to s. 28(4)(i) of the act, the findings and order of the Discipline Committee shall be published in summary form in the official publication of PEO; and

5. The issue of whether such publication shall be with or without the member's name shall be determined by the panel at the hearing of this matter.

The Joint Submission on Penalty stated that the member had independent legal advice with respect to his agreement to the penalty.

The association submitted that the admitted misconduct was serious; the member should have recognized that in using his professional engineer designation he shouldered responsibility to ensure public safety, among other things. The building, which he purported to inspect, is occupied by tenants and thus the member should have either refused to write a report for this property, or should have prepared a thorough and professional engineering report. The association argued that although there was no report of harm resulting, the conditions on the site could have resulted in harm and therefore raised concerns for public safety.

On the only issue that the parties raised on whether to publish the summary with or without the member's name, the association submitted that the summary should be published with the name. The association reasoned, among other things, that protection of the public, general deterrence and transparency considerations would all be met by publication with names. Further, it was urged that there should be compelling reasons to order publication without names.

The member's counsel argued that there were a number of factors mitigating against publication of the member's name (or details that could identify him), including: his age; his history and record as a professional engineer; the nature of his practice; and the facts in this case. Counsel pointed out that the member is over 70 years of age, is not now a practising engineer and admitted his guilt right away. It was submitted that the member was not aware that the document at issue—a letter that he signed directed to the counsel dealing with property belonging to his relative's corporation—would be used as an engineering report to present to the municipality, although he did know that his relative and the municipality were engaged in a dispute.

It was further submitted on behalf of the member that he was not paid for the letter, was not retained, was not involved in a project such as design services, and that he did use the words "visual report." It was submitted that the member made an error in judgment for which he was remorseful, and which had already caused him considerable embarrassment, anxiety and stress. The member has co-operated in all matters, and acknowledged his wrongdoings.

It was submitted that in balancing the public interest and the interest in fairness to the member, the panel should weigh the considerations in all the circumstances, against the publication of his name in the summary. It was further urged that the conduct in question was at the lower end of the scale of seriousness: publication was not necessary for general deterrence or protection of the public interest. The member was not likely to reoffend and was not practising or planning to practise given his undertaking and age. He was aware of the inappropriate

nature of his conduct. No actual harm had befallen anyone as a result of the misconduct. The conduct was not motivated by personal commercial gain. A publication of the summary without names would be sufficient to protect the public interest and deter potential wrongdoers. The summary itself shows that the association is prepared to deal aggressively with complaints and notify the profession of the need to be scrupulous in adhering to professional standards even when providing "off the cuff" opinions.

Counsel for the association replied that the breaches of the act and regulation in question were not merely technical breaches and the cumulative effect of the sanctions jointly submitted were not disproportionate to the culpability of the member, even including the publication of his name. Further, it was argued by the association that transparency was necessary to fulfil the objectives of the sentencing regime, including public protection and maintaining the integrity of the profession, among other considerations. The profession has expectations in respect of the drafting of such reports, as were at issue in this case. The association sought a ruling in which the panel exercised its discretion to order publication of the summary with the member's name.

PENALTY DECISION

The panel deliberated and rendered its decision. The panel chair noted that the panel had found the member guilty of the misconduct described in the Agreed Statement of Facts. Accordingly, the panel ordered the penalty in accordance with the Joint Submission on Penalty, deciding that the member will not be named in the official publication.

The panel concluded that the proposed penalty is reasonable and in the public interest. It is neither disproportionate nor does it bring the administration of justice into disrepute. The member is over 70 years of age, is not practising professional engineering, does not hold a Certificate of Authorization, has not been the subject of a complaint prior to this one, and his name will still be on the register for 12 months. The member acknowledged his shortcomings and his responsibility for same, has been co-operative and remorseful and has demonstrated respect for the profession in reaching agreement on fact and penalty with alacrity.

The parties left the determination as to whether to publish with the member's name to the discre-

tion of the panel. The panel considered the facts, the submissions of the parties, and the case law provided by the parties, and determined to exercise its discretion to order that the summary of the decision should be published without names. In the view of the panel, having regard to the facts and submissions, publication of the member's name would cause unnecessary and disproportionate anxiety and stress to the member given all of the circumstances, his advanced age, and the fact that the member has clearly undertaken not to practise professional engineering. It would be an unwarranted and disproportionate penalty when considered cumulatively with the balance of the penalties. It is the panel's view that the publication of the summary without names, would, in the very specific fact situation herein, be sufficient to meet the requirements of the sentencing regime under the act. The member, the profession and the public may have confidence in the conduct of professional regulation by the publication of the summary. The panel finds the particular constellation of facts before it sufficiently compelling to order publication without the name of the member.

The panel rendered its decision on penalty, including as to publication without the name of the member, orally at the conclusion of the hearing. The member waived his right to appeal. The association advised that it would not appeal.

The oral reprimand was administered at the conclusion of the hearing on November 5, 2012.

The written summary of the Decision and Reasons was signed by John Vieth, P.Eng., as chair on behalf of the other members of the discipline panel: Ishwar Bhatia, P.Eng., George Comrie, P.Eng., Daniela Iliescu, P.Eng., and Sharon Reid, C.Tech.

DECISION AND REASONS

In the matter of a hearing under the *Professional Engineers Act*, R.S.O. 1990, c. P.28; and in the matter of a complaint regarding the conduct of PAUL D. REW, P.ENG., a member of the Association of Professional Engineers of Ontario, and RUBICON ENVIRONMENTAL INC., a holder of a Certificate of Authorization.

This matter first came on for hearing before a panel of the Discipline Committee on August 30, 2010, at which time the panel granted an adjournment at the request of the Association of Professional Engineers of Ontario (association), with the consent of the member, Paul D. Rew, P.Eng. (Rew), and the holder, Rubicon Environmental Inc. (REI), due to the unavailability of certain witnesses and, as Aviva Harari, counsel for the association, was not ready to proceed at that time. Subsequently, the association retained Leah Price as counsel for the balance of the hearing. Prior to the adjournment being granted, the Notice of Hearing and Statement of Allegations were entered as exhibits. Rew and REI pleaded not guilty to the allegations, and the panel became seized. The hearing was scheduled to resume on November 30, 2010, but did not proceed on that date due to the unavailability of a member of the panel.

The hearing was then set to proceed on January 10, 2012. The panel received a motion from the association seeking an adjournment as one of their witnesses was unable to attend to testify on those dates because of childcare difficulties or, alternatively, that the hearing be held electronically, in part, so the witness could be heard. The panel determined to hear the motion and the responses from defence counsel in writing. The panel was not inclined to grant the association's request for an adjournment as the allegations concerned events that took place in 2007, and the matter was referred to the Discipline Committee and the allegations served on the defendants on or about October 28, 2009. The witness was able to revisit her childcare arrangements so that she could be available after 1 p.m. on the afternoon of January 10, 2012. The hearing ultimately proceeded on January 10, 11 and 12, 2012, and was scheduled to resume on May 1, 2 and 3, 2012. The defendant, Rew, was ill at that time, and so the hearing was rescheduled to July 24, 2012.

Prior to that date, a member of the panel, David Smith, became unable to complete the hearing. The remaining four panel members proceeded with the hearing, pursuant to section 4.4(1) of the *Statu-*

tory Powers Procedure Act, R.S.O. 1990, Chapter s.22 (and with the consent of all parties) on July 24, 25 and 26, 2012, and on August 16, 2012, at the offices of the association.

THE ALLEGATIONS

The allegations against Rew and REI, as stated in the four-page Statement of Allegations dated October 28, 2009, may be summarized as follows:

It is alleged that Rew and Rubicon Environmental Inc:

- (a) failed to report a potential risk to public health (from a contaminated aquifer) to the local medical officer of health and the Ministry of the Environment (MOE) office forthwith, contrary to subsections 72(2)(a) and (b), and 77(2)(i) of Regulation 941;
- (b) failed to provide accurate and timely information when directly questioned by the MOE, contrary to subsections 72(2)(c) and (d), and 77(6) of Regulation 941;
- (c) failed to act with courtesy and good faith toward Frank Colozza, P.Geol. (Colozza), when Colozza's name was used on correspondence without his consent, contrary to subsection 77(7)(i) of Regulation 941;
- (d) made a number of statements in the May 16, 2007 letter (public notice) that were not supported by the data reported, contrary to subsection 77(2)(iii) of Regulation 941;
- (e) failed to disclose appropriately a conflict of interest when REI was retained by a number of parties having an interest in the fill material at the subject site, contrary to subsections 72(2)(i) and 77(3) of Regulation 941;
- (f) failed to meet the standard expected from a professional engineer regarding the information documented in the phase II environmental site assessment (ESA) report, contrary to subsections 72(2)(d) and (g), and 77(1)(iv) of Regulation 941;
- (g) demonstrated a lack of understanding of the practices, protocols and standards involved in designing and conducting a sampling and analysis program for a phase II ESA, contrary to subsection 72(2)(a) of Regulation 941; and
- (h) breached section 53 of Regulation 941 made under the *Professional Engineers Act* by failing to date the phase II ESA report.

PLEA OF THE MEMBER AND/OR HOLDER

Rew and REI denied the allegations set out in the Notice of Hearing.

OVERVIEW

The hearing arose as a result of Rew's involvement in the assessment of soil and ground water conditions at 223017 Grey Road 17 in Springmount, ON, known as Paper Products Plus Inc. property (PPP), as a professional service to Norm Prince (Prince), the owner of this commercial property. The allegations pertain to the conduct of Rew and REI between April 18, 2007 and July 23, 2007.

Rew has held a licence under the provisions of the *Professional Engineers Act* since 1991. Rew was the responsible professional engineer for REI while this firm held a Certificate of Authorization from October 4, 1994 to January 13, 2010. Rew had been practising environmental engineering with his company, REI, in the Owen Sound area for approximately 13 years at the time he was retained by Prince to assess the conditions on the PPP property. Rew completed numerous environmental assessments, nationally and internationally, prior to being retained by Prince and has not been before a discipline panel previously. Rew has been practising environmental engineering for the past 22 years.

Prince was concerned about the content of fill materials that had been placed on his property without his consent, and that these materials might have caused the degradation he observed in the water supplied by a well located on the property. He contacted REI to investigate.

Rew supervised the excavation of test pits, collected samples and submitted them for laboratory analysis. Rew also accepted samples taken by his client for analysis. He produced a report for his client based on the laboratory analysis and his own observations at the site.

The complaint against Rew and REI was raised by a professional engineer working in the Owen Sound office of the MOE that oversees the region where the PPP property is located. The complaint raised questions about the quality of the report produced by Rew. The complaint also questioned Rew's conduct toward protection of public safety through the course of his involvement with the site assessment. The validity of the allegations arising from this complaint were evaluated by the panel based on the evidence presented.

Several of the allegations pertained to a letter circulated in the community warning of potential environmental issues around the PPP property and calling a public meeting. The fact of the letter was uncontested. For ease of reference and because

much of the evidence in this case related to the sending and content of that letter, the text of the letter dated May 16, 2007 is set out in full below:

“May 16, 2007

To Whom It May Concern -

ENVIRONMENTAL ISSUES - SPRINGMOUNT

Construction and demolition waste, solid waste and hazardous industrial waste from the former BCK property were mixed and placed on the Win-Mar and Paper Products Plus Inc. properties on Grey Road 17. Contamination from these soils has leached into the aquifer. Testing of the groundwater has confirmed that the Paper Products property water well contains elevated levels of the heavy metals parameters.

Until further notice, we are recommending that you do not drink water from your water well, and minimize the amount of water used.

In this regard, a public meeting is being held at 1:00 p.m. on Tuesday, May 22, 2007 at the Springmount RV property and we encourage your attendance.

*Frank Colozza, P.Geol
Hydrogeologist”*

Paul D. Rew, P.Eng.

The key evidentiary question is whether this letter was authored, sent or was caused to be sent by Rew or REI.

Another question is whether Rew was aware of any potential danger to public safety from his assessment of the PPP property that he failed to report to the proper authorities. In particular, did Rew or REI fail to correct or report a situation that the practitioner believes may endanger the safety or the welfare of the public?

Further, was it reasonable, under the circumstances at the time, for Rew to withhold the report prepared for his client from the MOE?

The MOE succeeded in compelling the disclosure of the report Rew delivered to his client. This report was subsequently assessed as being intended as a full and complete phase II ESA. It did not meet the standard for several reasons. The key evidentiary question for the panel is whether this report met the standard expected from a professional engineer, given the purpose for which the report was intended by Rew’s client.

THE EVIDENCE

In the seven-day span of this hearing, a large volume of evidence was presented. The panel found that much of this evidence was not pertinent to decisions on the allegations. In fact, much of the evidence presented was not disputed, and could have been agreed prior to the hearing and introduced as a statement of facts. For the benefit of reading, the panel will only present the pertinent evidence here.

Exhibit 5 was the Professional Engineers Ontario registrar’s certification that Rew held a licence and REI held a Certificate of Authorization under the provisions of the act at all material times during the events giving rise to this hearing.

The association called Heather Pollard (Pollard), an area supervisor with the MOE during the period to which her testimony pertained. Pollard

referred to her notes (Exhibit 7) while testifying that she was made aware of the public meeting in Springmount and the invitation letter (Exhibit 8). Pollard recounted the dialogue with the Grey-Bruce Health Unit regarding information on any drinking water contamination. The health unit reported to her by email (Exhibit 9) that they received a call from Prince on August 8, 2006 complaining of contaminated well water that they did not act on.

Pollard testified that she attended the meeting in Springmount. During that meeting, Rew showed her the laboratory analysis results he had received and agreed to send her his full report. She testified that, at the meeting, Rew stated that the laboratory analysis results showed “hits in every category.” However, she “became less concerned” when Rew indicated, in response to Pollard’s questions, that he had not compared the lab results with the Ontario Safe Drinking Water Standard (OSDWS). Pollard identified the phase II ESA report document authored by Rew and REI as received by the MOE (Exhibit 12). She stated that Rew requested she visit the test pits with him. She never complied with his request. In cross-examination, Pollard testified that Prince did not require a phase II ESA report for his PPP property.

The association called Colozza to testify about the letter (Exhibit 8) bearing his name. Colozza is a hydrogeologist with JFM Environmental. He testified that he was informed about the letter by Ian Mitchell (Mitchell) of the MOE. Colozza testified that he was not aware of the letter (Exhibit 8) previously. He identified his May 23 message to Mitchell (Exhibit 15), denying his involvement with the letter (Exhibit 8) and explaining his interaction with Rew and REI regarding the PPP property. In the message, Colozza states that Rew informed him in a telephone conversation that Christi Rew, Rew’s wife, distributed the letter and that Rew described and provided background on the letter. On cross-examination, Colozza could not recall from whom he received a copy of the letter (Exhibit 8). Colozza testified that he did not know whether Rew was aware of the contents of the letter (Exhibit 8) prior to the May 22 meeting.

The association called Dana Mohammed (Mohammed), MOE environmental officer, to recount his investigation of the ground water

contamination concerns reported to Pollard during the May 22 meeting, Mohammed referred to his notes (Exhibit 16) during testimony about the water samples he collected and had analyzed. He testified to his letter to Rew requesting a report detailing the data he mentioned during the May 22 meeting (Exhibit 17) and, subsequently, contacting Bruce Thom (Thom) and Prince with the same request. Mohammed identified the fax received from REI in response to his request for the report and that he was directed to contact lawyer Ian Robertson. Mohammed identified the provincial order he issued (Exhibit 11) to Thom and Prince, demanding the report pertaining to the ground water contamination reported by Rew at the May 22 meeting. Mohammed identified the letter (Exhibit 24) he received from attorney John Tamming, representing Prince, and stating conditions under which his client would agree to provide the report. Mohammed testified that he received the requested report (Exhibit 14) from Thom. Mohammed also testified that the analytical results for the water samples he collected on May 22, entered as Exhibit 27, did not justify a warning, as given in the May 16 letter. The panel asked Mohammed if he expected to receive a phase II ESA report in response to his request. He answered he was happy to see it, but it was not expected.

The association called David Flynn (Flynn) of Stantec Consulting as an expert witness regarding environmental engineering practice. Flynn identified the report he prepared (Exhibit 29) on his review of the phase II ESA report produced by Rew and REI pertaining to the PPP property (Exhibit 12). Flynn also referred to a constellation of professional standards, guidelines and regulations pertaining to environmental engineering (Exhibit 30). Throughout his testimony, Flynn identified the deficiencies of the report in Exhibit 12 and an entirely completed phase II ESA. In cross-examination, Flynn testified that the analysis results in the report (Exhibit 12) were within Ontario safe drinking water standards. Flynn felt that the ministry should have called Rew before the public meeting. He also testified that he did not believe Prince was injured by the conduct of Rew or REI.

The defence called Rew. He recounted the circumstances of his being retained by Prince to investigate the fill placed on his PPP property and the possible connection with the contamination of the water in the well. Rew testified that he was

not aware of the May 16 letter (Exhibit 8), calling a public meeting, until May 22, the day of the meeting. Rew testified that he did discuss the water analysis results he had during the meeting. He testified that he told Pollard he could not provide his report because it was prepared for Prince for litigation. He claimed his report was protected by “litigation privilege.” Rew testified to presenting the report in exhibits 12 and 14 to Prince and his attorney as a draft. He testified that his client did not require a full phase II ESA because a land use change was not contemplated. He testified that he signed and sealed the report, after review, on the request of Prince. Rew testified to having been retained by Harold Sutherland to assure compliance with the MOE order to remove the contaminated fill from the Win-Mar and adjacent PPP property. Rew identified his report on compliance (Exhibit 33) as accepted by the MOE. The report shows that the contaminated fill that was the cause of Prince’s concerns, and the reason he engaged Rew and REI, had been removed. In cross-examination, Rew was presented with his invoice to Prince and asked whether the May 16 entry for preparing correspondence was for the letter in Exhibit 8. Rew denied this. He testified to receiving a copy of the letter at the meeting on May 22 and including it as an appendix of his report. Rew was asked to explain why he did not respond to clarify the statements made by Colozza (Exhibit 15) implicating him and REI in the preparation and distribution of the May 16 letter (Exhibit 8). Rew responded by showing that the message was not copied to him by email, despite the footnote, and that he did not receive this message from Colozza in a timely way.

The defence called Bruce Tunnicliffe (Tunnicliffe) of Vertex Environmental Inc. as an expert witness regarding environmental engineering practice. Tunnicliffe testified in support of the report prepared by Vertex employee, Rick McGregor, (Exhibit 39) in response to the report prepared by expert Flynn. He testified that he would sign the report as his own work. Tunnicliffe testified that it is common practice to include a statement on a phase II ESA that the contents of the report cannot be relied upon. He testified that a report prepared for a client should not be distributed without the client’s consent. Tunnicliffe testified that it is typical practice to distribute reports in draft form to clients for review. He testified that draft reports are also

often submitted to the MOE, in draft, for technical review and comment. Tunncliffe testified that he has been involved in the preparation of many phase II ESA reports and that the reports are written differently depending on the needs of the client. He testified that, in his experience, large corporate clients often have different standards for the phase II ESA reports they order in terms of format, methods used and extent of sampling and analysis.

The defence called Colleen Newell (Newell), owner of many gas stations and a frequent client of Rew and REI. Newell testified to her satisfaction with the work of Rew and REI.

The defence called Zihnija Hurem, PhD (Hurem), of PH Quantum, an analytical services laboratory that tested water samples provided by Rew and REI. Hurem testified that the results of his testing appear on pages 132 to 150 of Exhibit 12. He testified to the special purpose of analyzing the old samples provided to Rew by Prince. He testified to the circumstances of the certification of his employees and the accreditation of his laboratory at the time he tested the samples provided by Rew from the PPP property.

DECISION

(i) Onus and standard of proof

The association bears the onus of proving the allegations in accordance with the standard of proof, which the panel is familiar with, set out in *Re Bernstein and College of Physicians and Surgeons of Ontario* (1977) 15 O.R. (2d) 477. The standard of proof applied by the panel, in accordance with the Bernstein decision, was a balance of probabilities with the qualification that the proof must be clear and convincing and based upon cogent evidence accepted by the panel.

(ii) Decision

Having considered the evidence and the onus and standard of proof, the panel finds that the association has failed to prove any of the allegations against Rew and REI.

REASONS FOR DECISION

The first allegation is that Rew and REI failed to report a potential risk to public health (from a contaminated aquifer) to the local medical officer of health and the MOE office forthwith. Mohammed testified that laboratory analysis of the water samples he obtained from wells on the PPP property and

adjacent properties did not justify a warning. Pollard testified that she was less concerned when she compared the analysis results obtained from Rew to the OSDWS. Flynn testified that the laboratory results presented in the report prepared by Rew (Exhibit 12) did not indicate a drinking water safety hazard. Rew testified that the water he sampled from the well on the PPP property was of poor quality due to odour, appearance and taste; however, the laboratory analysis indicated it was within Ontario safe drinking water standards. Rew testified that he was concerned about the condition of the water, but he did not have facts indicating a public health risk. In evidence introduced during the testimony of Pollard (Exhibit 9, pp 2), the health unit acknowledges receiving a report from Prince almost one year prior about well water contamination, and that they were not so concerned for public safety to act on it. The association did not introduce any evidence that a potential public health risk existed of which Rew was, or ought to have been, aware. The panel finds that Rew and REI had no reasonable cause to report a risk to public health.

The second allegation is that Rew and REI failed to provide accurate and timely information when directly questioned by the MOE. Pollard of the MOE testified that, during a public meeting on May 22, 2007, Rew indicated that he had evidence of soil groundwater contamination on the PPP property and that he had prepared a report of his findings. Pollard testified that she verbally requested a copy of the report from Rew during the meeting. Rew and REI did not provide the report to the MOE. Mohammed, a senior environmental officer with the MOE, testified to the multiple requests for the report, including a letter dated May 28, 2007 to Rew and REI (Exhibit 17). Rew testified he informed the MOE that the report was the property of his client and that he did not have the authority to release it without his client's permission. This is corroborated by the fax sent on May 28, 2007, by Mohammed to Prince (Exhibit 19) requesting the report and identifying Rew and REI as consultants of Prince. Mohammed identified a letter received by fax from Rew on June 15, 2007 (Exhibit 20), in which Rew indicates that further correspondence needs to be handled through a lawyer. Mohammed complied and sent a letter dated June 19, 2007 (Exhibit 21), to the lawyer requesting the report. Rew testified to his concern about the contaminated soil his report

indicates is on the PPP property and the cost his client would incur if the MOE ordered it removed. Rew testified to his belief that it would be unprofessional for him to release the report without his client's permission. Rew testified that he was not aware of any imminent threat to public safety indicated by the findings of his report. This is corroborated by the findings of the panel on the first allegation. Without an overriding public safety concern, the panel believes that Rew made a reasonable decision not to release the report and to direct the MOE to the proper authority to obtain the report. The panel finds that Rew and REI did act professionally, contrary to the allegation.

The third allegation, that Rew failed to act with courtesy and good faith toward Colozza, when Colozza's name was used on correspondence without his consent, relates to the May 16, 2007 letter (Public Notice). The letter was introduced as Exhibit 8 by the association and identified in testimony by Pollard as under-signed by Rew and Colozza. In his testimony, Colozza denies involvement in preparing the letter and claims his name was used without his knowledge or consent. Rew testified that this letter was not authored, sent or was caused to be sent by him. Rew testified that he did receive the letter and that he included it as correspondence in his report. As it appears in evidence, there are no signatures on the letter, and it is on plain paper without a letterhead. To prove the allegation, the association must establish that the letter was authored, sent or was caused to be sent by Rew or REI. The panel did not find any clear and cogent evidence identifying Rew or REI as the source of the letter. In deciding whether Rew is likely responsible for the letter, the panel looked for motivation. From the decision on the first allegation, Rew does not have reasonable cause to declare a public health risk to warn against drinking water from wells on and around the PPP property, as is written in the letter. The panel found no evidence to suggest a motive for an experienced environmental engineer like Rew to issue such a letter. The panel does find evidence in the testimony of Rew and in correspondence (Exhibit 41) from Prince to Rew dated June 1,

2007 that other parties with a pecuniary interest in the remediation of the PPP property and adjacent properties were aware of the names and facts to have written the letter. Not being professionals, these parties would not likely have been aware of the consequences of circulating such a letter in terms of public alarm and panic. One possible motivation for calling a public meeting could have been to raise awareness of the contaminated soil to build public demand for having it removed, as testified by Rew. Because there is no clear, cogent and convincing evidence that Rew or REI was responsible for the letter, the panel found, on the balance of probabilities, that the allegation of failing to act with courtesy and good faith was not proven.

The fourth allegation is that Rew and REI made a number of statements in the May 16, 2007 letter (Public Notice) that were not supported by the data reported. Following from the decision on the third allegation that the letter was not authored, sent or caused to be sent by Rew or REI, the statements in the letter cannot be attributed to them. The panel, therefore, found this allegation was also unproven.

On the fifth allegation of failing to appropriately disclose a conflict of interest when Rubicon was retained by a number of parties having an interest in the fill material at the subject site, the evidence brought by the association referred to the former site of the Black Clawson Kennedy foundry in Owen Sound (BCK property), where it was believed the fill material originated. Rew testified to the fact that his father-in-law had owned the BCK property at one time, and that he and REI were retained to manage the environmental issues on that site. He also testified that, on the death of his father-in-law, his wife inherited the property. He testified that the BCK property was subsequently sold and the new owners did not retain him or REI. Rew testified that material was not moved from the BCK property to the PPP property, or the adjacent Win-Mar property prior to the sale. His testimony is corroborated in the earlier cross-examination of Pollard on page 77 of Exhibit 12 to show that the township permit that resulted in the contaminated fill on the PPP property had not been issued prior to July 2004. The defence presented page 47 of Exhibit 12, identified by Rew as a letter naming Azimuth Environmental as the firm retained by the new owners and dated February 2004, prior to the fill being placed and over three years prior to Rew and REI working for Prince on the PPP property. The association did not bring any contradictory evidence. From the evidence presented, the panel does not find any apparent conflict of interest that Rew could have failed to disclose.

The sixth allegation is that Rew and REI failed to meet the standard expected from a professional engineer regarding the information documented in the phase II ESA report. Mohammed testified that the MOE did receive the report of Rew and REI in reply to the order he issued to Prince. Flynn, as an expert for the association, gave his detailed opinion of the deficiencies of the report as received by the MOE (Exhibit 12) in comparison to standards of practice in phase II ESAs, while referring to his written analysis (Exhibit 29). Flynn regarded the report as a complete and final report. Rew testified that he was the author of the report, as presented

in Exhibit 12, and that this version of the report was a draft presented to his client for interim review. Although the report bears his seal and signature, unusual practice for a draft report, Rew testified that he had not presented it as a final report, but as a draft for discussion with his client, as was his usual practice. His client, Prince, asked him to sign and seal the report to show that he would stand behind it. Rew testified that the report was intended for his client to have contaminated fill removed from his property and that the report was never intended for submission to the MOE for any purpose for which such a report would normally be used, as in the change of use or the sale of a property. In Exhibit 34, the association presented the REI invoice for the preparation of the report. The invoice does not indicate that the work was complete. The association did not introduce any testimony, in chief or in cross, that Rew and REI represented the report (Exhibit 12) as a final phase II ESA. Tunnicliffe, as an expert for the defence, noted that it was his practice to mark each page of a draft report as draft. He also testified that draft phase II ESA reports, at various stages of completeness, are frequently provided to clients and the MOE for review and comment. The panel does not find that Rew or REI failed to meet the standard expected from a professional engineer by presenting a draft copy of the report to his client and his client's lawyer.

The seventh allegation is that Rew and REI demonstrated a lack of understanding of the practices, protocols and standards involved in designing and conducting a sampling and analysis program for a phase II ESA. Although Rew and REI had likely conducted similar work on many occasions, the association chose to restrict the evidence it presented to the one instance on the PPP property. In his own testimony and in the text of his report, Rew identified aspects of the sampling and analysis that were incomplete or not conducted according to standards. The evidence indicated that Rew understood that he was deliberately not following all practices, protocols and standards, while meeting the needs of his client's situation. In that context, Rew took samples from the test pits to provide his

client with a cost-effective and timely preliminary evaluation of contamination to facilitate preparation for possible future litigation. On this single instance of practice by Rew and REI presented as evidence by the association, the panel does not find a lack of understanding of the practices, protocols and standards involved in designing and conducting a sampling and analysis program for a phase II ESA.

On the eighth allegation of Rew and REI breaching section 53 of Regulation 941 made under the *Professional Engineers Act* by failing to date the phase II ESA report, the panel considered the evidence in Exhibit 12 and the possibility that the order of the pages may have been altered as the document was handled and copied. The panel heard no clear and cogent evidence that the letter was not part of the report. The panel finds the cover letter for the report bearing a date satisfied the regulatory requirement.

The panel orders that its decision be published in full in the official journal of the association. J.E. (Tim) Benson, P.Eng., signed this Decision and Reasons as chair on behalf of the members of the discipline panel: Ishwar Bhatia, P.Eng., Phil Maka, P.Eng., and John Vieth, P.Eng.

SUMMARY OF DECISION AND REASONS

Association of Professional Engineers of Ontario v. MICHAEL M. COOK, P.ENG.

On June 12, 2009, the chief building official of the City of Belleville referred documents accompanying building permit applications to the Association of Professional Engineers of Ontario (association) for the purpose of determining if the *Professional Engineers Act* (act) was contravened by the member. The registrar initiated an investigation pursuant to section 33 of the act. The results of the investigation were reported to the association's Executive Committee, who referred the matter by resolution to the Discipline Committee on August 9, 2011.

An Amended Statement of Allegations dated March 26, 2012, was tabled at the hearing. The panel was advised that both counsel for PEO and for the member had reached an Agreed Statement of Facts, which included an admission of guilt, and that there was a Joint Submission on Penalty. Both documents, dated September 10, 2012, were filed at the hearing.

The member was licensed in 1982 and was the sole practitioner under a Certificate of Authorization issued initially in 2003. The complaint from the chief building official related to errors of omission on five building permit applications, dating from May 19, 2006 to June 1, 2009. The member had made revisions, which were accepted, and permits were issued for two of the applications. The association's investigation identified shortcomings in practice standards, and that there were deficiencies in documentation on four projects during the period from September 2009 through February 2010.

The member pled guilty, and a plea inquiry conducted by the panel chair satisfied the panel that the plea was made willingly, unequivocally and without reservation.

DECISION

The panel determined that the member was guilty of professional misconduct, as defined under section 28(2)(a) of the act, as a result of contravening Regulation 941, R.R.O. 1990, as amended, section 53 and section 72(2), subsections (a) negligence; (b) safeguarding life, health or property; (d) compliance with statutes, etc.; (e) signing and sealing documents; (h) competence to do work; and (j) unprofessional conduct.

The panel accepted that the shortcomings and deficiencies were acknowledged in the Agreed Statement of Facts. The facts presented supported the allegations that the applicable sections of Regulation 941 had

been contravened. A finding of "unprofessional" under subsection 72(2)(j) was appropriate as there was no evidence to support the more serious provisions. The member's guilty plea was offered willingly and without reservation.

PENALTY

Both counsel argued in support of the Joint Submission on Penalty, which was the outcome of serious negotiations. The member had legal counsel throughout this adversarial process. The penalty addressed concerns related to specific and general deterrence, remediation and public protection. Two precedent decisions of the Discipline Committee were presented in support of the Joint Penalty Submission. The member had been co-operative throughout the process.

The penalty proposed suspensions of the member's licence and Certificate of Authorization, with such suspensions commencing October 1, 2012, thus allowing three weeks to clear up outstanding work. The four-month licence suspension was considered significant, and reinstatement of the Certificate of Authorization was conditional on the member passing two examinations.

The panel accepted the Joint Submission on Penalty, and ordered:

1. Pursuant to section 28(4)(b) of the act, Cook's licence shall be suspended for a period of four months, commencing on October 1, 2012;
2. Pursuant to section 28(4)(b) of the act, Cook's Certificate of Authorization shall be suspended from October 1, 2012, until such time as Cook shall have written and passed both of the following two examinations:

- (a) 07-STR-A2 (formerly 98-CIV-A2)–
Elementary Structural Design, and
 - (b) 07-STR-A5 (formerly 98-CIV-B2)–
Advanced Structural Design;
3. Pursuant to section 28(4)(e) of the act, it shall be a term, limitation and condition on Cook’s licence that, in the event Cook fails to pass successfully the examinations referred to in paragraph two hereof within 24 months of the discipline hearing, his licence shall be revoked;
 4. Pursuant to section 28(4)(c) of the act, Cook undertakes that his practice from September 10, 2012, until the commencement of the suspensions referred to above, shall be limited to completing projects currently underway, and that he shall not accept or carry out any new or additional work or projects in this period;
 5. It shall be a further term, limitation and condition on Cook’s licence that, in the event Cook offers engineering services to the public while his Certificate of Authorization is suspended pursuant to paragraph two hereof, or practises professional engineering while his licence is suspended pursuant to paragraph one hereof, his licence shall be revoked;
 6. Pursuant to section 28(4)(i) of the act, the findings and order of the Discipline Committee shall be published in summary form, including Cook’s name, in PEO’s official publication; and
 7. There shall be no order with respect to costs.

REASONS FOR PENALTY DECISION

The panel accepted that the joint submission was the result of a serious attempt to reach agreement, and that the member’s interest was well represented in the process.

The four-month suspension of the member’s licence is significant, but appropriate in this case. The prerequisites for reinstating the member’s Certificate of Authorization are a reasonable means to address remediation and public safety. Publication, in sum-

mary, should deter the general membership from engaging in similar conduct in the future.

The member acknowledged shortcomings and his responsibility for same. He was co-operative in the investigation and demonstrated respect for the profession in reaching agreement on fact and penalty. As such, an award of costs was not warranted.

The Joint Submission on Penalty is reasonable and would not bring the administration of justice into disrepute. Existing client needs were considered. Public confidence in the association’s ability to be a self-regulator of the profession should be satisfied. The decision and penalty serves and protects the public interest.

The Decision and Reasons was signed by the panel chair, Michael Wesa, P.Eng., on behalf of the panel, which included Ishwar Bhatia, P.Eng., Rebecca Huang, LLB, David Robinson, P.Eng., and Bill Walker, P.Eng.

NOTICE OF LICENCE SUSPENSION, HOUSTON T. ENGIO

On January 8, 2013, Houston T. Engio’s professional engineering licence was suspended pursuant to a November 8, 2011 order of the Discipline Committee. The order was issued following a finding of professional misconduct against Engio at a discipline hearing held on that date. Engio’s licence was suspended because he failed to write and pass the professional practice examination within the 14-month timeframe prescribed by the Discipline Committee.



PUBLICATIONS ORDER FORM

	\$	No.	Total
The Professional Engineers Act, R.S.O. 1990, Chapter P.28	N/C		
Ontario Regulation 941/90.....	N/C		
Ontario Regulation 260/08.....	N/C		
By-law No. 1	N/C		
Practice Guidelines			
Acting as Contract Employees (2001).....	10.00		
Acting as Independent Contractors (2001).....	10.00		
Acting Under the Drainage Act (1988).....	10.00		
Acoustical Engineering Services in Land-Use Planning (1998).....	10.00		
Building Projects Using Manufacturer-Designed Systems & Components (1999).....	10.00		
Commissioning Work in Buildings (1992).....	10.00		
Communications Services (1993)	10.00		
Engineering Services to Municipalities (1986).....	10.00		
Environmental Site Assessment, Remediation & Management (1996).....	10.00		
General Review of Construction as Required by Ontario Building Code (2009).....	10.00		
Geotechnical Engineering Services (1993).....	10.00		
Guideline to Professional Engineering Practice (2012).....	10.00		
Human Rights in Professional Practice (2009).....	10.00		
Land Development/Redevelopment Engineering Services (1994).....	10.00		
Mechanical & Electrical Engineering Services in Buildings (1997).....	10.00		
Professional Engineer as an Expert Witness (2011).....	10.00		
Professional Engineer's Duty to Report (1991)	N/C		
Project Management Services (1991).....	10.00		
Reports on Mineral Properties (2002)	10.00		
Reports for Pre-Start Health and Safety Reviews (2001)	10.00		
Reviewing Work Prepared by Another Professional Engineer (2011).....	10.00		
Roads, Bridges & Associated Facilities (1995).....	10.00		
Selection of Engineering Services (1998).....	10.00		
Solid Waste Management (1993)	10.00		
Structural Engineering Services in Buildings (1995)	10.00		
Temporary Works (1993).....	10.00		
Transportation & Traffic Engineering (1994).....	10.00		
Use of Agreements Between Clients & Engineers (2000) (including sample agreement)	10.00		
Use of Computer Software Tools Affecting Public Safety & Welfare (1993)	10.00		
Use of the Professional Engineer's Seal (2008)	10.00		
Business Publications			
Agreement Between Prime Consultant & Sub-Consultant (1993) per package of 10.....	10.00		
Licensing Guide & Application for Licence (2007)	N/C		
Required Experience for Licensing in Ontario (2007)	N/C		

Fax to: 416-224-8168 or 800-268-0496
Phone: 416-224-1100 or 800-339-3716
Mail to: Professional Engineers Ontario
40 Sheppard Ave. W., Suite 101
Toronto, ON M2N 6K9
Attn: Margaret Saldanha

Name _____

Shipping Address _____

City _____

Province _____

Postal Code _____

Tel _____

Fax _____

Shipping and handling is included.
Please allow 10 days for delivery.

Subtotal	
13% HST	
Total	

Please charge to VISA number

--	--	--	--	--	--	--	--	--	--	--	--

(please list all numbers on card) Expiry Date

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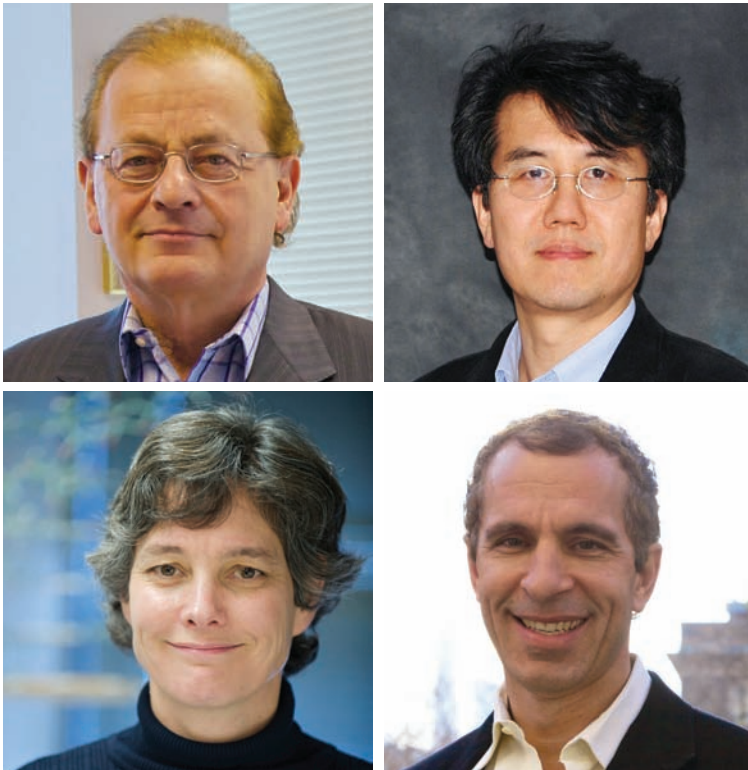
Signature _____

I have enclosed a cheque or money order made payable to Professional Engineers Ontario.

Membership # _____

P.ENGs HONOURED FOR ACHIEVEMENTS

By Nicole Axworthy



Clockwise from top left: Andrew Goldenberg, PhD, P.Eng.; Chul Park, P.Eng.; Doug Perovic, PhD, P.Eng.; and Elizabeth Edwards, PhD, P.Eng.

THE ENGINEERING INSTITUTE OF CANADA (EIC) has announced the 2013 recipients of its honours, awards and fellowships. The EIC's senior awards, its highest distinctions, are awarded to members of its technical societies. Four of the five senior awards will be presented to PEO members at the 2013 awards gala on May 28 to recognize outstanding service to the engineering profession. The Sir John Kennedy Medal, EIC's highest honour, is being presented to Andrew Goldenberg, PhD, P.Eng., for his noteworthy contributions to the science of engineering. The Julian C. Smith Medal is going to Peter K. Kaiser, P.Eng., for achievement in the development of Canada. Chul B. Park, PhD, P.Eng., is receiving the K.Y. Lo Medal for significant engineering contributions at the international level. The John B. Stirling Medal is being awarded to Ian D. Moore, P.Eng., for leadership and distinguished service at the national level within the institute and/or its member societies. Additionally, three PEO members are being inducted as fellows of EIC for their exceptional contributions to engineering in Canada: Igor Pioro, P.Eng., Shamin Sheikh, P.Eng., and Yu Sun, P.Eng.

Chul Park has also been inducted into the Korean Academy of Science and Technology. Park is a University of Toronto professor, Canada research chair in microcellular plastics and the founder and director of the Microcellular Plastics Manufacturing Laboratory. He holds 20 patents and his research has been licensed by more than 700 companies.

Three more PEO members have been honoured with the Queen Elizabeth II Diamond Jubilee Medal. Diane Freeman, P.Eng., FEC, Waterloo city councillor, director of the Association of Municipalities of Ontario and PEO's 2010-2011 president, was presented with the medal after being nominated by the Federation of Canadian Municipalities. Pat D.C. Barnhouse, P.Eng., was presented the medal through the Naval Association of Canada for services to Canada and, in particular, to the naval association. Muttiah Yathindra, P.Eng., was nominated by the Federation of Canadian Municipalities for his tsunami relief work in Batticaloa, Sri Lanka.

University of Toronto professors Elizabeth Edwards, PhD, P.Eng., of chemical engineering and applied chemistry, and Frank Kschischang, PhD, P.Eng., and Jonathan Rose, PhD, P.Eng., of the Edward S. Rogers Sr. department of electrical and computer engineering, have been inducted into the Royal Society of Canada (RSC). The RSC is a senior national body of distinguished Canadian scholars, artists and scientists. It consists of nearly 2000 fellows, who are selected by their peers for outstanding contributions to the natural and social sciences, the arts and the humanities.

University of Toronto professors Andreas Mandelis, PhD, LEL, of mechanical and industrial engineering, and Doug Perovic, PhD, P.Eng., of materials science and engineering, have been elected fellows of the American Association for the Advancement of Science. The AAAS is the largest international organization dedicated to advancing science or its applications on a global basis. Σ

FINDING YOUR WAY IN A GLOBAL ENGINEERING MARKET

BY MICHAEL MASTROMATTEO





WITH MANY ENGINEERS LICENSED IN ONTARIO BUT WORKING AROUND THE WORLD, IT'S IMPORTANT TO CONSIDER HOW PRACTITIONERS MAINTAIN LEGAL AND ETHICAL STANDARDS IN AN INCREASINGLY COMPETITIVE GLOBAL MARKET.

These days, the pages of professional journals are filling up with reports about the growing international aspect of the engineering profession. Over the past 24 months in this magazine alone, there have been at least a dozen news articles about globalization, mobility of practitioners across national and provincial boundaries, engineering services remaining competitive in an increasingly globalized marketplace, internationally educated engineers looking to practise in Ontario, and the regulatory challenges inherent in the export, or import, of engineering work.

Just under two years ago, Engineers Canada convened a day-long panel discussion on globalization and its impact on education, practice and regulation. Although much of the workshop was dedicated to education and accreditation in an international milieu, there was some focus on the potential licensing and regulatory considerations for organizations such as PEO.

Among the major questions raised: How can regulators more effectively and accurately assess an international engineer's experience?; and, How can regulators control the chain of custody and responsibility for engineering work done in other countries by locally trained (i.e. non-Canadian) engineers for Canadian projects?

Since the workshop in May 2011, three task groups of Engineers Canada's International Committee have examined the educational, registration and practice considerations of globalization (see "What is Engineers Canada doing about globalization?," p. 51) and produced a set of 30 recommendations and an action plan, which will be presented to Engineers Canada's board this summer.

But studies of globalization's impact on professional regulation are not confined to the national level. In 2012, the Ontario Profession Regulators' Policy Network (OPRPN), an informal network of regulators of professions established to explore regulatory policy issues and best practices in policy development, dedicated its annual conference to the issues

involved in regulating professionals in a global market. One of the key concerns raised at the OPRPN meeting was how to guarantee the safety of engineering products or services originating elsewhere, but used in Ontario.

As well, the Ontario Centre for Engineering and Public Policy (OCEPP) included in its policy engagement series a discussion of some of the regulatory challenges involved in the movement of engineering services across international borders.

Presenter Michelle Cooper, director, services trade policy division, Department of Foreign Affairs and International Trade (DFAIT), said it can be a tricky proposition to negotiate free-trade agreements with other nations, while at the same time protecting the right of regulatory agencies to set standards for the protection of the general public.

“It’s important to ensure that qualification as well as licensing requirements and procedures—while achieving legitimate public policy goals—do not constitute restrictions to trade in services at the same time,” Cooper said. “Canada always maintains the right of Canadian regulatory authorities to regulate, such as setting standards and competency requirements, for the protection of the public/consumer interest. Canada’s priority with such rules is to ensure transparency, predictability and fair treatment with licensing requirements and procedures in markets abroad.”

Cooper also participated in the May 2011 Engineers Canada globalization panel.

WHOSE RULES?

Although engineering practice in Canada is regulated on a province-by-province basis, in many places in the world engineering is unregulated, or regulatory and licensing regimes are in their infancy. When engineers licensed in Ontario work in such jurisdictions, whose rules, standards and practice guidelines apply? And what about engineering in Ontario done by non-Ontario practitioners?

In fact, professional engineering in Ontario must be done under the supervision of an Ontario-licensed professional engineer who takes responsibility for the work, no matter where in the world the home base of the practitioner doing the work. As such, work can be outsourced to firms in other countries if an Ontario P.Eng. supervises and takes responsibility for the work. While it may be challenging for the Ontario P.Eng. stamping the work to fully oversee the practitioner doing the work, such a practice arrangement is legal in Ontario.

As for Ontario engineers practising in other jurisdictions, *Engineering Dimensions* canvassed some Ontario-licensed engineers who practise internationally for their experiences concerning rules and standards in other jurisdictions.

John Boyd, PhD, P.Eng., a former consulting engineer with Golder Associates, was on the executive committee and served one term as president of the International Federation of Consulting Engineers (FIDIC), which comprises the national associations of consulting engineering companies, such as the Association of Consulting Engineering Companies—Canada (ACEC). FIDIC promotes and implements the consulting engineering industry’s strategic goals.

Today, Boyd is principal, Design Firm Seminars, and a consultant in infrastructure projects with DFAIT. He was one of the presenters at

the Engineers Canada May 2011 panel, leading a discussion on industry and business issues related to international engineering.

In his presentation, “International engineering: Implications for a Canadian industry,” Boyd said consulting firms often work with local partners in other countries to take on new projects, and noted that most challenging projects today are found not in North America, but in developing countries. Responding to the particular needs of overseas projects allows practitioners expanded opportunities and potential for innovation, he said.

In an age of rapid information flow, it is a great benefit to firms and practitioners to understand the “international realities” of engineering, he added, noting that the “intellectual colonialism” of the past no longer applies. Competent local engineers are now found in all countries, he said.

In an interview with *Engineering Dimensions*, Boyd said that in his experience, Canadian engineers working where engineering is not regulated as it is in Canada are guided by the performance standards imposed by their home jurisdiction. In most cases, consulting firms themselves impose standards of behaviour and practice on their engineers working internationally.

In addition, he said, Canadian-licensed engineers overseas should make it a priority to find out the local engineering rules and regulations that do apply before beginning work on a project outside their usual engineering jurisdiction.

“Engineers going from Ontario to work internationally—where more limited standards may exist—should try to maintain the higher level of standards wherever possible,” Boyd said.

Boyd’s successor as Canadian representative on the FIDIC executive is Chris Newcomb, P.Eng., a consulting engineer with international experience licensed by the Association of Professional Engineers and Geoscientists of British Columbia.

Newcomb is the past president of ACEC and still chairs its International Committee.

Over his professional career, Newcomb has worked as a consulting engineer in France, Tanzania, Ecuador, Indonesia and several other countries. He is currently involved in a project in Cambodia for his Vancouver-based firm McElhanney Consulting Services Ltd.

He agreed with Boyd that, in most cases, internationally posted engineers tend to observe the ethics of their home regulator, and notes that there are sometimes no comparable codes and standards to guide their work in developing countries.

“OUR PROFESSIONAL ASSOCIATIONS REQUIRE US TO BEHAVE ETHICALLY, PROTECT PUBLIC SAFETY, AND DELIVER A HIGH STANDARD OF ENGINEERING, NO MATTER WHERE WE ARE WORKING.”



“Our professional associations require us to behave ethically, protect public safety, and deliver a high standard of engineering, no matter where we are working,” Newcomb said. “However, codes and standards vary from region to region, even within Canada, because of climate, seismic zones and other factors, and we are required to adhere to the codes and standards that prevail in that jurisdiction. If we are working in a jurisdiction where there is an absence of standards, we have a professional responsibility to seek a code that is culturally and/or geographically proximate. For example, in many former British colonies, British standards are the norm, even if they are not enshrined in local regulations.”

Newcomb said most Canadian firms working internationally are also motivated to comply with their regulatory responsibilities to remain in good standing with their insurers, and to maintain a good reputation, as a lot of work is awarded based on reputation, qualifications and quality.

REGULATORY RESPONSIBILITIES

Debanjan Mookerjea, P.Eng., a project manager with RJ Burnside and Associates, is now involved in a water-supply infrastructure project in Mozambique. Over his 10 years at Burnside, he has also participated in wide-ranging projects in Barbados and at a number of Ontario sites.

Mookerjea agrees that when working in international settings, one of the priorities is to determine which local regulations, standards and codes exist.

“When there is an apparent gap or lack of clarity on regulations, we work with the client to determine how to address those gaps,” he says.

“We apply the same code of conduct that is inherent in our work as professional engineers in Ontario on all of our projects to ensure the public is protected, whether the project is undertaken locally or abroad,” Mookerjea adds.

Fanny Wong, P.Eng., a project supervisor with CH2M Hill, Toronto, and vice chair of PEO’s Professional Standards Committee, has worked alongside other engineers in such places as England and the Middle East.

She echoed the need to pay attention to local practice considerations. And, as with Mookerjea’s experience, Wong noted that working in an international setting is often preceded by a detailed search for any rules that might apply to the particular jurisdiction. In the case where insufficient information is available, the practice is often to compare information from other jurisdictions to come up with a working guideline.

But looking for relevant standards, guidelines and ethics isn’t the only concern for engineers working away from home.

continued on p. 50

John Cardillo, P.Eng., is an Ontario-licensed engineer who works as a technical specialist and electrical engineer for Ford Motor Company in Allen Park, Michigan, just outside of Detroit. In that role, he helps develop automotive diagnostic equipment.

For Cardillo, globalization in engineering invites questions about fair competition, competence assurance and safe use of some manufactured goods. These concerns have become more acute with the significant loss of manufacturing jobs in Ontario over the last 15 years.

Cardillo wonders if the loss of manufacturing jobs might lead to the outright export of engineering jobs.

“How can a well-compensated engineering profession in an advanced, regulated economy compete against an unregulated, emerging market that’s graduating engineers who are willing to work for much lower wages?” he asks, adding that globalization and competition have forced companies to seek out the most economical sources for manufacturing.

“Why wouldn’t these companies also seek out the most economical source for engineering those products?” he continues. “In Ontario, the loss of manufacturing jobs has diminished the ability of unions to effectively act on behalf of their shrinking membership. I can’t help but wonder if the same might happen to the engineering profession.”

Although Cardillo is not required to seal designs in his role at Ford, he has a keen interest in the implications for the profession when it comes to international projects and engineers working in other jurisdictions.

“I’m interested in the dramatic differences that I observed in the reach and role of a regulatory body between Ontario and Michigan. In Ontario, the profession is self-regulated, while in Michigan, the profession is regulated by the state,” Cardillo notes. “PEO exams focus on ethical and legal standards. Michigan exams focus on competency.”

He recalls that as an engineering student in Ontario, the regulator seemed “an integral part” of the university education program, with the goal of licensure being just as important as obtaining the degree.

“When I ask my colleagues in Michigan why none of them pursued a licence, the general response is that the licence was briefly mentioned in university and that it was only required if you are part of an engineering consultant firm,” he says.

Cardillo also wonders about the impact of reciprocity agreements—permitting countries to exchange goods and services more readily—on engineering. He believes it will take a co-operative effort between regulatory bodies in participating countries to enact reciprocity agreements providing “an accurate and trusted assessment” of an international engineer’s education and experience. “For that to be effective, you need regulating bodies acting at the national level and, of course, an interested membership,” he says.

ADAPTING TO LOCAL CONTEXT

Yet another dimension of the increasing mobility of engineering is the need to reconcile the “universality” of engineering principles with having to practise in accordance with local or regional practice standards and codes. This concept is manifest here in the 12-month “Canadian experience” requirement for P.Eng. licensure in Ontario.

Newcomb, however, doesn’t see much of a conflict in this area. “Is there a clash between the concept of engineering principles as being universal with the need for local associations/regulators to impose experience requirements and even culturally influenced codes of conduct on practitioners? No, these two notions are compatible,” he said. “Engineering principles are universal, but every engineering project takes place in a cultural, social, environmental and economic context, and modern-day consulting engineers have learned to adapt their work to the local context.”

For Boyd, globalization presents a concern long held by consulting engineers about the “commodification” of engineering.

“A major point in the globalization debate is the treatment of engineers as professionals—wherever they work,” he says. “They can’t cut corners to take a lower fee from a client and they can’t let the client transfer unrealistic liabilities to practitioner or firm.”

Consulting engineers hold up qualifications-based selection (QBS), the procurement of engineering services based on quality rather than price, as an important safeguard in this respect. Boyd notes, however, that practising QBS can be difficult in countries that have laws about awarding tenders to the lowest-priced bidder. “With price as the only factor,” he notes, “there is no innovation, no creativity, no concerns for sustainability.”

Despite such factors, however, Newcomb sees international engineering practice as enhanced engineering practice: “The cross-fertilization of ideas is the essence of creativity, and creativity is the essence of engineering,” he says. “Notwithstanding the challenges, the globalization of engineering services is a good thing. Canadian firms that export their services enhance Canada’s image abroad, they gain a better understanding of the role of engineering in solving the world’s problems, and they bring new ideas back to Canada that enrich our domestic consulting engineering industry.”

It’s a point picked up on by Mookerjea, who sees global engineering as a learning experience: “Often we are working in countries where basic resources we are used to, such as background information or design standards, do not exist,” he said. “In the absence of these resources, our engineers often need to examine a problem at its core and develop a solution from first principles to make sure it is responsive and appropriate under the context in which it is being applied.” Σ

What is Engineers Canada doing about **GLOBALIZATION?**

Engineers Canada's International Committee is looking to stay ahead of the curve in assessing globalization's impact on the profession.

BY MICHAEL MASTROMATTEO





ny examination of globalization's impact on engineering practice ultimately involves input from Engineers Canada, the national organization of the provincial and territorial regulators in this country.

Engineers Canada established its International Committee to act as the focal point for the group's international activities. In addition to monitoring current mutual recognition agreements with other jurisdictions, the committee coordinates the development of new mutual recognition agreements at the request of the Engineers Canada board of directors. As part of this work, the committee sometimes initiates and coordinates research on the registration and licensure systems used in other countries.

The committee also monitors international trade activities to assess their impact on public safety and the Canadian engineering profession.

In May 2011, the committee hosted a day-long seminar to discuss globalization in its many forms (see *Engineering Dimensions*, July/August 2011, p. 16). A report and recommendations based on the seminar are scheduled to be presented to the Engineers Canada board in June.

To explain more about Engineers Canada's work on the international front, *Engineering Dimensions* invited Chris Roney, P.Eng., BDS, FEC, chair of the International Committee, to consider some key questions.

Michael Mastromatteo: Can you give us an update as to the status of the International Committee's report on the globalization issue?

Chris Roney: Engineers Canada recognizes the importance of getting a handle on this issue, and specifically called for an assessment of the impacts of globalization in our 2011 to 2016 strategic plan.

To that end, Engineers Canada hosted the May 2011 workshop to look in depth at international trends with respect to mobility of engineering and the potential impacts on education, practice and regulation in Canada. The committee has since analyzed the results of the workshop and collated the comments into three themes: 1. impacts on engineering education, 2. impacts on engineering practice, and 3. impacts on regulation.

The committee subsequently established and populated three task groups to carry out strength, weakness, opportunity and threat (SWOT) analyses of the international issues and trends related to each of the themes, as well as to prepare recommendations for action.

Those task groups have now completed this work and submitted their reports to the committee.

The committee is now working on developing an action plan and tools to ensure that Engineers Canada, and our constituent associations, have the information and tools they need to fulfill their respective mandates of both serving the engineering profession and protecting the Canadian public in the face of globalization.



MM: What to you are the main drivers of the engineering profession's interest in globalization?

CR: The engineering profession recognizes that international borders mean very little to the flow of information and expertise, particularly given today's ease of information transfer. As regulators, PEO and the other constituent associations need to be aware of the implications that globalization of engineering services has on the protection of the public here in Ontario. There is, in my opinion, a public expectation that if some engineered product, structure or service fails and adversely impacts the public in Ontario, there should be means to hold those responsible for the failure accountable here in Ontario, regardless of where the engineering actually took place. This is a significant challenge for regulators.

MM: Do free trade arrangements pose any particular concerns?

CR: As our government negotiates trade deals that include trade in engineering services, there is a risk that may adversely impact both the engineering profession here—our ability to carry out our regulatory mandate—and the public's welfare. The risk arises from the fact that the way engineers are accredited, and engineering services are regulated, varies widely around the world. Unless we, as a profession, are at the table, or at least serving to advise our government's trade negotiators, Canada risks being exposed to, and having to accept as equivalent, lower quality engineering from abroad.

We must also be aware of the risks that the greater availability of engineering services from elsewhere, often at lower cost, will have on Canadian engineering firms. To best protect the public, as well as to ensure the competitiveness of Canadian engineering, it's important that we ensure that any trade deals that Canada negotiates for engineering services and products respect and preserve Canada's high standards.

The good news is that Engineers Canada has been successful to date in working with the Department of Foreign Affairs and International Trade, to the point that the department actively consults with us.

MM: With respect to the mobility question, what are some of the challenges inherent in practitioners being exposed to different engineering standards in different jurisdictions?

CR: Mobility for Canadian engineers working abroad is certainly important. Here, however, we have an advantage in that the Canadian system of accreditation of our universities and colleges and our licensing system are held in high regard internationally. Many other developing nations seeking to establish a modern framework for engineering regulation consult with Engineers Canada to learn from the Canadian model. Engineers Canada recently hosted a visit from a delegation from China on this. The more we can promote the Canadian model internationally, the better positioned the engineering profession is in Canada to compete on a level playing field, and the better protected the Canadian public will be by having engineering done abroad held to the same standards as it is here.

MM: Do you think it's getting more difficult for regulators and licensing associations to require local experience (Canadian experi-

ence) as a condition of licensing in an era of increasing globalization?

CR: I anticipate that we will likely face increasing pressure to do away with any requirements for Canadian experience as a condition of licensure. Some will paint it as a barrier to trade. However, we, as regulators of engineering, exist to protect the public where engineering is concerned. Unless we can make a convincing argument that Canadian experience is important in that goal of protecting the public, we cannot defend such a requirement.

I strongly believe there is a good argument for requiring local experience, and I believe it is something that we should work hard to preserve. Foreign engineering firms can easily collaborate with Canadian-based engineers and engineering firms. This serves to protect the public here by ensuring there is local accountability, as well as local knowledge and experience of Canadian codes, standards, ethics and values. It is also good for the Canadian engineering community in that collaboration brings with it a transfer of knowledge and experience from the foreign firms to the Canadian practitioners.

For individual foreign engineers seeking a licence in a Canadian jurisdiction, the insistence on Canadian experience is, and should remain, an important requirement for the same reasons as I outlined above. Again, when viewed as a matter of public welfare, it is a very defensible requirement and it makes sense.

MM: Although Canadian engineering is well regarded for its high standards of admission and practice, do you think there is anything we can learn from taking a global view of engineering?

CR: Absolutely. To be successful in the world of engineering you must be constantly striving to learn new things and to take on new challenges. Canadian engineers and engineering firms have a tremendous opportunity to acquire new knowledge and experience by taking advantage of international opportunities and collaborating with the global engineering community. Yes, we are well regarded and we are well respected, but we don't have the market cornered on innovation and great engineering. We mustn't rest on our laurels. Globalization of engineering is happening whether we like it or not. We can embrace it and learn to master it, or we can be swept aside by it. The choice is ours. Σ

COUNCIL RECEIVES FIVE-YEAR BUSINESS PLAN FROM 40 SHEPPARD WORKING GROUP

484TH MEETING, MARCH 21 AND 22, 2013

By Jennifer Coombes

AT THE MARCH MEETING, council received the 40 Sheppard Working Group's (40SWG) report "Fiscal Responsibility Going Forward: 5 Year Business Plan for 40 Sheppard West (2014-2019)," which outlines the "vision drivers and considerations" for the operation of PEO's headquarters.

The report notes PEO's vision drivers for the building are to:

- "have an engineering centre befitting a major profession, consistent with the image of professional engineering, a landmark building;
- embrace state-of-the-art building automation and communication technology (electrical, mechanical, AV, IT);
- maximize the use of natural light, reducing energy use, lowering the carbon footprint, achieving better air quality and human comfort, and developing a strategy to achieve more/better amenity space;
- pursue best practices for environmental and sustainability standards in the most cost-effective manner; do not pursue LEED certification unless it meets these criteria;
- be a centre of activity for 1000 volunteers serving on 30 committees and 36 chapters, be a resource to engage the public and future engineers; and
- support the work of staff in a consistent and efficient manner."

Council also gave the go-ahead for the 2013 projects recommended by the 40SWG.

Among the projects is a staff relocation from two suites on the second floor to available space on the sixth floor to enable the rental of the second floor to new or existing tenants. The 40SWG report notes the move benefiting PEO in several ways: revenue from leasing the second floor, a decrease in common area maintenance

tax, improved interaction of staff and overall efficiencies. The budget set for the relocation is not to exceed \$544,000 plus HST.

Other approved projects include an HVAC upgrade for the fifth floor (\$222,000 plus HST), blinds replacement for all PEO-occupied floors except the ground floor, which has already undergone a blinds replacement (\$100,000 plus HST), and door relocation for the tribunal adjudication rooms (\$41,000 plus HST) to address concerns expressed by members of the Discipline and Registration committees regarding the current layout of the tribunal hearing area.

COMMUNICATIONS STRATEGY

At the March meeting, then Councillor Paul Ballantyne, P.Eng., FEC, sponsored an item on the agenda that PEO look into the role a committee of volunteers and advisors might take in developing a communications strategy to support PEO's objectives.

Prompted by a request for council to approve additions to PEO's editorial/publication policy at the February meeting, Ballantyne presented a briefing note to council expressing a long-time concern with what he feels are PEO's piecemeal communications strategies (*Engineering Dimensions*, Government Liaison Program, Elliot Lake response, etc.). He envisions a think tank made up of engineer volunteers that would help to develop and deliver clear, cohesive messages to a range of different audiences. "While the effort has been strong, my sense is that some initiatives have been more successful than others and the actual return on communication dollar is difficult to determine. PEO needs to better understand that it is implementing a broader balance and successful program in all areas necessary to meet PEO's objective," he says.

Council has tasked the Advisory Committee on Volunteers to propose a plan by the September meeting detailing how a group of volunteers and advisors could help council develop a high-level communications strategy.

AGM WEBCASTING AND ELECTRONIC VOTING

The 2013 annual general meeting (AGM) held on April 27 was for the first time available by webcast to up to 200 online viewers, (77 members registered). Members attending the meeting were able to make use of electronic voting that immediately tabulated and displayed the results, which eliminated the lengthy and error-prone process of manually counting votes that has been employed at past AGMs. At the March meeting, council approved a budget for both of the new AV services not to exceed \$11,000 plus HST.

The AGM webcast is available on PEO's website (www.meetview.com/peo20130427) for up to a year for viewing by members and the public. The decision to use these electronic tools for future AGMs will be revisited in subsequent years, based on feedback gathered from the 2013 meeting.

2014 AGM HOST

Council has chosen the Niagara Falls Chapter to host the 2014 annual general meeting and associated events with the Kingston Chapter as backup host.

PEO's practice is to hold the AGM and other events outside the greater Toronto area every three years to enable members who may not ordinarily be able to attend a Toronto-area AGM to participate in PEO governance. Five chapters expressed an interest in hosting the 2014 AGM and submitted proposals: Grand River, Kingston, London, Niagara Falls and Sudbury. The proposals were reviewed by then President-elect Annette Bergeron, P.Eng., Acting CEO/Registrar Michael Price, P.Eng., FEC, Chief Administrative Officer Scott Clark, FEC (Hon), and Director, People Development Fern Gonçalves.

FILLING A COUNCIL VACANCY

Council has approved a new protocol for filling a vacant council position that has over six months left in the position's term. If there are fewer than six months remaining in the term, no appointment will be made.

Under the approved protocol, council will be guided by the following criteria to address vacancies:

- (a) Where the vacancy occurs in the position of president-elect, a by-election will be held and the successful candidate will be appointed;
- (b) Where a vacancy exists during the PEO election nomination period, an additional position will be added to the ballot for the unexpired portion of the term of office, and the successful candidate for that position will be appointed;
- (c) Where a duly-elected candidate is unable to take office, or where the duly-elected candidate has taken office and a vacancy occurs outside of the PEO election nomination

period, the Human Resources Committee (HRC) will identify one or more nominees for council to consider for appointment to fill the vacancy. HRC will provide the list of nominees at the council meeting following notification of the vacancy, providing there is sufficient time for the committee to consider potential candidates for appointment, contact them to confirm their willingness to accept appointment, and place the item with name(s) properly on the agenda of that council meeting; and

- (d) HRC will consider the following members for nomination, in priority order:
 - (i) runners-up, if any, in descending order of votes cast, in the election where the councillor was elected to the office vacated;
 - (ii) candidates for the same council position as the one vacated, in descending order of votes cast, in a recent council election other than the one where the councillor was elected to the office vacated; or
 - (iii) previously elected councillors.

ADDRESSING VOTER APATHY

In light of the poor voter turnout in the 2013 council elections, council has directed the Regional Councillors Committee to make recommendations for ways to uncover the reasons why. In raising this matter at the March meeting, Councillor Michael Wesa, P.Eng., FEC, expressed concern that only 8 per cent of members voted in the last election and wondered whether there is a widespread problem of which council is unaware.

ENGINEERS CANADA DIRECTOR

Rakesh Shreewastav, P.Eng., has been appointed by PEO council as a director to the Engineers Canada board of directors. His three-year term will begin at the 2013 Engineers Canada annual general meeting in June. Shreewastav joins the other PEO directors Diane Freeman, P.Eng., FEC, Catherine Karakatsanis, P.Eng., FEC, Phil Maka, P.Eng., FEC, and Chris Roney, P.Eng., BDS, FEC, in his new role. Σ

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TO THE MEMBERS OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO

We have audited the accompanying financial statements of the Association of Professional Engineers of Ontario, which comprise the balance sheets as at December 31, 2012, December 31, 2011 and January 1, 2011, and the statements of revenue, expenses and changes in net assets and of cash flows for the years ended December 31, 2012 and December 31, 2011, and a summary of significant accounting policies and other explanatory information.

Management's responsibility for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of the Association of Professional Engineers of Ontario as at December 31, 2012, December 31, 2011 and January 1, 2011, and the results of its operations and its cash flows for the years ended December 31, 2012 and December 31, 2011, in accordance with Canadian accounting standards for not-for-profit organizations.

Deloitte.

Chartered Professional Accountants

Chartered Accountants

Licensed Public Accountants

March 22, 2013

BALANCE SHEETS

AS AT DECEMBER 31, 2012, DECEMBER 31, 2011 AND JANUARY 1, 2011

		December 31, 2012	December 31, 2011 (Note 2)	January 1, 2011 (Note 2)	
ASSETS	CURRENT	Cash in interest-bearing accounts	\$ 1,363,674	\$ 794,808	\$ 2,245,695
		Marketable securities at fair value	5,197,580	3,379,767	12,113,603
		Accounts receivable	334,954	1,098,513	258,241
		Prepaid expenses and deposits	203,488	242,258	166,870
		Other assets	58,860	–	–
			7,158,556	5,515,346	14,784,409
	Capital assets (Note 4)	36,467,068	36,908,779	28,559,805	
	TOTAL ASSETS	43,625,624	42,424,125	43,344,214	
LIABILITIES	CURRENT	Accounts payable and accrued liabilities (Note 17)	1,070,804	1,435,289	1,711,683
		Fees in advance and deposits	8,907,075	8,592,054	8,698,335
		Current portion of long-term debt (Note 6)	854,000	826,400	789,400
			10,831,879	10,853,743	11,199,418
	LONG TERM	Long-term debt (Note 6)	10,246,000	11,100,000	11,926,400
		Employee future benefits (Note 7)	6,929,600	6,250,139	5,787,807
	TOTAL LIABILITIES	28,007,479	28,203,882	28,913,625	
	Net assets (Note 8)	15,618,145	14,220,243	14,430,589	
	TOTAL LIABILITIES AND NET ASSETS	43,625,624	42,424,125	43,344,214	

On behalf of council: Denis Dixon, P.Eng, FEC, president; Annette Bergeron, P.Eng., MBA, president-elect

STATEMENTS OF CASH FLOWS

YEARS ENDED DECEMBER 31, 2012 AND DECEMBER 31, 2011

		2012	2011
OPERATING	Excess of revenue over expenses	\$ 1,397,902	\$ (210,346)
	Add (deduct) items not affecting cash		
	Write-off of building improvements	–	945,247
	Amortization	1,764,934	1,330,565
	Amortization–other assets	45,101	–
	Employee future benefits	2,231,300	1,930,337
	Change in unrealized losses on marketable securities	29,053	235,140
	(Gain) loss on disposal of marketable securities	(13,292)	280,420
		5,454,998	4,511,363
	Change in non-cash working capital items (Note 12)	752,865	(1,298,335)
	6,207,863	3,213,028	
FINANCING	Repayment of mortgage	(826,400)	(789,400)
	Contributions to employee future benefit plans	(1,551,839)	(1,468,005)
		(2,378,239)	(2,257,405)
INVESTING	Proceeds of disposal of marketable securities	5,361,528	17,030,330
	Acquisition of marketable securities	(7,195,102)	(8,812,054)
	Additions to capital assets	(1,323,223)	(10,624,786)
	Additions to other assets	(103,961)	–
	(3,260,758)	(2,406,510)	
	Increase (decrease) in cash	568,866	(1,450,887)
	Cash, beginning of year	794,808	2,245,695
	Cash, end of year	\$ 1,363,674	\$ 794,808

[FINANCIAL STATEMENTS]

STATEMENTS OF REVENUE, EXPENSES AND CHANGES IN NET ASSETS

YEARS ENDED DECEMBER 31, 2012 AND DECEMBER 31, 2011

	2012	2011
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(Note 2)

	2012	2011	
REVENUE	P.Eng. revenue	\$ 14,367,398	\$ 14,224,220
	Application, registration, examination and other fees	5,452,203	5,189,979
	Building operations (Note 5)	2,848,021	2,354,380
	Advertising income	447,158	409,690
	Investment income	114,353	311,462
	23,229,133	22,489,731	
EXPENSES	Staff salaries and benefits/retiree and future benefits	10,483,525	9,659,586
	Building operations (Note 5)	2,347,270	2,267,212
	Purchased services	1,179,776	1,331,419
	Amortization	960,662	728,513
	Volunteer expenses	869,324	945,188
	Engineers Canada	847,971	825,979
	Occupancy costs (Note 5)	846,281	652,279
	Computers and telephone	606,110	612,297
	Chapters (Note 15)	590,794	598,260
	Postage and courier	544,204	641,278
	Legal (corporate, prosecution and tribunal)	514,531	1,159,134
	Transaction fees	489,294	415,953
	Contract staff	331,831	341,088
	Consultants	248,933	274,272
	Printing	153,642	142,768
	Recognition, grants and awards	129,861	161,292
	Insurance	115,375	139,747
	Advertising	111,300	185,950
	Office supplies	110,545	116,729
	Staff expenses	107,307	167,161
Professional development	103,056	64,715	
	21,691,592	21,430,820	
Excess of revenue over expenses before the undernoted	1,537,541	1,058,912	
Council discretionary reserve expenses (Note 9)	(139,639)	(324,011)	
Write-off of building improvements (Note 10)	–	(945,247)	
Excess of revenue over expenses	1,397,902	(210,346)	
Net assets, beginning of year	14,220,243	14,430,589	
Net assets, end of year	\$ 15,618,145	14,220,243	

NOTES TO THE FINANCIAL STATEMENTS

DECEMBER 31, 2012 AND DECEMBER 31, 2011

1. NATURE OF OPERATIONS

The Association of Professional Engineers of Ontario (PEO or association) was incorporated by an act of the legislature of the Province of Ontario. Its principal activities include regulating the practice of professional engineering, and establishing and maintaining standards of knowledge, skill and ethics among its members in order to protect the public interest. As a not-for-profit professional membership organization it is exempt from tax under section 149(1) of the *Income Tax Act*.

2. ADOPTION OF A NEW ACCOUNTING FRAMEWORK

During the year ended December 31, 2012, PEO adopted the new accounting standards for not-for-profit organizations (new standards) issued by the Canadian Institute of Chartered Accountants (CICA). In accordance with section 1501 of the CICA handbook, first-time adoption, the date of transition to the new standards is January 1, 2011 and PEO has prepared and presented an opening balance sheet at the date of transition to the new standards. This opening balance sheet is the starting point for the entity's accounting under the new standards. In its opening balance sheet, under the recommendations of section 1501, PEO:

- recognized all assets and liabilities whose recognition is required by the new standards;
- did not recognize items as assets or liabilities if the new standards do not permit such recognition;
- reclassified items that it recognized previously as one type of asset, liability or component of net assets, but are recognized as a different asset, liability or component of equity under the new standards; and
- applied the new standards in measuring all recognized assets and liabilities.

In accordance with the requirements of section 1501, the accounting policies set out in Note 3 have been consistently applied to all years presented and adjustments resulting from the adoption of the new standards have been applied retrospectively. PEO has elected to recognize cash and marketable securities at fair value at the date of transition to the new standards. PEO has not applied any other of the exemptions available in section 1501.

Impact of the adoption of the new standards on the balance sheet and net asset balances as at January 1, 2011:

	Balance as previously reported	Adjustments	Reference	Balance as adjusted
	\$	\$		\$
Assets				
Prepaid expenses and deposits	189,070	(22,200)	(a)	166,870
Derivative asset	20,970	(20,970)	(c)	-
Liabilities				
Current portion of long-term debt	808,000	(18,600)	(a)	789,400
Long-term debt	11,930,000	(3,600)	(a)	11,926,400
Net assets	14,451,559	(20,970)	(c)	14,430,589

Impact of the adoption of the new standards on the balance sheet and net asset balances as at December 31, 2011:

	Balance as previously reported	Adjustments	Reference	Balance as adjusted
	\$	\$		\$
Assets				
Prepaid expenses and deposits	245,858	(3,600)	(a)	242,258
Liabilities				
Current portion of long-term debt	830,000	(3,600)	(a)	826,400
Derivative liability	746,901	(746,901)	(c)	-
Net assets	13,473,342	746,901	(c)	14,220,243

The impact of the adoption of the new standards on the statements of revenue, expenses and changes in net assets for the year ended December 31, 2011 is summarized as follows:

	Balance as previously reported December 31, 2011	Adjustment	Reference	Balance as adjusted at December 31, 2011
	\$	\$		\$
Investment income	546,602	(235,140)	(b)	311,462
Excess of revenue over expenses	24,794	(235,140)		(210,346)

Explanations of adjustments:

(a) Transaction costs

Under the new standards, transaction costs associated with the assumption of long-term debt is included as part of the amortized cost of the long-term debt. The purpose of the adjustment is to reclassify against the long-term debt the costs incurred on the assumption of the mortgage loan, which were previously presented as deferred financing costs.

FINANCIAL STATEMENTS

(b) Marketable securities

Previously, in accordance with section 3855 of the CICA handbook, PEO classified its marketable securities as available for sale, with changes in fair value recorded through net assets in the statement of revenue, expenses and changes in net assets until realized through disposal or other than temporary impairment, at which time they were recorded through income in the statement of revenue, expenses and changes in net assets. Under the new standards, PEO will record marketable securities at fair value on the date of acquisition, with any subsequent changes in fair value recorded through income in the statement of revenue, expenses and changes in net assets. As a result of retroactively applying this policy, unrealized gains previously directly included in net assets, flow through income, with no impact on previously recorded net assets.

(c) Derivative asset/liability

Previously, in accordance with section 3855 of the CICA handbook, PEO measured its interest rate swap, which met the criteria for hedge accounting, at fair value with changes in fair value recorded through net assets in the statement of revenue, expenses and changes in net assets. Under the new standards, as the swap continues to be an effective hedge, PEO is no longer required to record the fair value of the swap as an asset or liability.

3. SIGNIFICANT ACCOUNTING POLICIES

These financial statements have been prepared in accordance with Canadian accounting standards for not-for-profit organizations and reflect the following accounting policies:

(a) Financial instruments

PEO initially recognizes financial instruments at fair value and subsequently measures them at each reporting date, as follows:

Asset/liability	Measurement
Cash and marketable securities	Fair value
Accounts receivable	Amortized cost
Accounts payable and accrued liabilities	Amortized cost
Long-term debt	Amortized cost

Financial assets measured at amortized cost are assessed at each reporting date for indications of impairment. If such impairment exists, the asset shall be written down and the resulting impairment loss shall be recognized in the statement of revenue, expenses and changes in net assets for the period.

Transaction costs are expensed as incurred.

(b) Hedge accounting

PEO entered into an interest rate swap in order to reduce the impact of fluctuating interest rates on its long-term debt. The

policy of PEO is not to enter into interest rate swap agreements for trading or speculative purposes.

The interest rate swap held by PEO is eligible for hedge accounting. To be eligible for hedge accounting, an instrument must meet certain criteria with respect to identification, designation and documentation. In addition, the critical terms of the derivative financial instrument must match the specific terms and conditions of the hedged item. The fair value of derivative instruments eligible and qualifying for hedge accounting is generally not recognized on the balance sheet. Gains and losses on such instruments are recognized in income in the same period as those of the hedged item.

Interest on a hedged item is recognized using the instrument's stated interest rate plus or minus amortization of any initial premium or discount and any financing fees and transaction costs. Net amounts receivable or payable on the interest rate swap are recorded on the accrual basis of accounting and are recognized as an adjustment to interest on the hedged item in the period in which they accrue.

PEO may only discontinue hedge accounting when one of the following situations arises:

- (i) the hedged item or the hedging item ceases to exist other than as designated and documented; or
- (ii) the critical terms of the hedging item cease to match those of the hedged item, including, but not limited to, when it becomes probable that an interest-bearing asset or liability hedged with an interest rate swap will be prepaid.

When a hedging item ceases to exist, any gain or loss incurred on the termination of the hedging item is recognized as an adjustment of the carrying amount of the hedged item.

When a hedged item ceases to exist, the critical terms of the hedging item cease to match those of the hedged item, or it is no longer probable that an anticipated transaction will occur in the amount designated or within 30 days of the maturity date of the hedging item, any gain or loss is recognized in net income.

(c) Revenue recognition

Licence fee revenue, excluding the portion related to the building fund, is recognized as income on a monthly basis over the licence period. Building fund revenue is recognized into income at the commencement of the licence period. Other revenues are recognized when the related services are provided.

(d) Donated services

The association receives substantial donated services from its membership through participation on council and committees and as chapter executives. Donations of services are not recorded in the accounts of the association.

(e) Employee future benefits

The association accrues its obligations under employee benefit plans and the related costs, net of plan assets. The association has

adopted the deferral and amortization approach, which includes the following policies:

- The cost of pensions and other retirement benefits earned by employees is actuarially determined using the projected unit credit method pro-rated on service, and management's best estimate of expected plan investment performance, salary escalation, retirement ages of employees and expected health-care costs;
- The pension plan assets are valued at fair market value;
- Based on an actuarial assessment that is conducted every three years, the asset base of the pension plan may have to be adjusted and the amount of the adjustment could be material. The most recent actuarial valuation was performed as at January 1, 2011;
- All past service costs and actuarial gains or losses arising after January 1, 2000, are amortized starting with the fiscal year following the occurrence in accordance with the requirements of chapter 3461 of the CICA handbook;
- The excess of the unamortized cumulative actuarial gains and losses, as of the beginning of the period, over 10 per cent of the greater of the accrued benefit obligations and market value of assets at the same date, will be amortized over the employee average remaining service lifetime of active members, which is nine years as at January 1, 2011; and
- When the restructuring of a benefit plan gives rise to both a curtailment and a settlement of obligations, the curtailment is accounted for prior to the settlement.

(f) Capital assets

Capital assets are recorded at cost. Amortization is calculated on a straight-line basis at the following annual rates.

Building	2%
Building improvements	5%
Building improvements common area	3.3% to 10%
Furniture, fixtures and telephone equipment	10%
Audio visual	20%
Computer hardware and software	33%

The association's investment in property, plant and equipment is included as part of net assets on the balance sheet.

(g) Use of estimates

The preparation of financial statements in conformity with Canadian accounting standards for not-for-profit organizations requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates. Accounts requiring significant estimates and assumptions include capital assets, accrued liabilities, and employee future benefits.

4. CAPITAL ASSETS

	December 31, 2012		
	Cost	Accumulated amortization	Net book value
	\$	\$	\$
Building	19,414,668	1,478,021	17,936,647
Building improvements	7,010,410	706,639	6,303,771
Building improvements, common area	6,145,192	590,989	5,554,203
Land	4,366,303	-	4,366,303
Computer hardware and software	2,231,180	1,728,624	502,556
Furniture, fixtures and telephone equipment	1,350,847	400,218	950,629
Audio visual	950,111	146,287	803,824
Construction in progress	49,135	-	49,135
	41,517,846	5,050,778	36,467,068

	December 31, 2011		
	Cost	Accumulated amortization	Net book value
	\$	\$	\$
Building	19,414,668	1,089,726	18,324,942
Building improvements	6,745,747	367,308	6,378,439
Building improvements, common area	5,993,968	173,557	5,820,411
Land	4,366,303	-	4,366,303
Computer hardware and software	2,043,614	1,389,324	654,290
Furniture, fixtures and telephone equipment	1,295,429	213,737	1,081,692
Audio visual	330,904	48,202	282,702
	40,190,633	3,281,854	36,908,779

	January 1, 2011		
	Cost	Accumulated amortization	Net book value
	\$	\$	\$
Building	19,414,668	701,433	18,713,235
Building improvements	4,028,450	131,046	3,897,404
Building improvements, common area	124,612	3,049	121,563
Land	4,366,303	-	4,366,303
Computer hardware and software	3,618,984	3,110,175	508,809
Furniture, fixtures and telephone equipment	1,949,309	1,256,241	693,068
Audio visual	486,518	227,095	259,423
	33,988,844	5,429,039	28,559,805

FINANCIAL STATEMENTS

During the year, building improvements with a cost of \$Nil (2011–\$1,007,980) and accumulated amortization of \$Nil (2011–\$62,733) were written off. Refer to Note 10 for details.

5. BUILDING OPERATIONS

PEO maintains accounting records for the property located at 40 Sheppard Avenue West, Toronto, ON, as a stand-alone operation for internal purposes. The results of the operation of the building, prior to the elimination of recoveries and expenses related to PEO, are as follows:

	2012	2011
	\$	\$
Revenue		
Rental	1,080,969	902,179
Operating cost reimbursements, tenants	1,490,013	1,264,988
Parking	150,582	114,950
Miscellaneous	126,457	72,263
	2,848,021	2,354,380
Operating cost reimbursements, PEO	1,001,307	773,079
Total revenue	3,849,328	3,127,459
Recoverable expenses		
Property taxes	631,642	624,867
Utilities	463,960	429,976
Amortization and interest	589,106	253,301
Janitorial	208,651	239,717
Payroll	255,093	176,335
Repairs and maintenance	100,496	120,796
Property management and advisory fees	76,875	76,339
Administrative	33,781	29,184
Insurance	22,397	18,525
Road and ground	15,722	14,303
Security	23,784	13,586
	2,421,507	1,996,929
Other expenses		
Amortization of deferred costs	48,701	18,600
Amortization of building	388,293	388,293
Interest expense on note and loan payable	560,424	613,520
Leasing fees net of imputed interest on recoverable expenses	(70,348)	22,949
	927,070	1,043,362
Total expenses	3,348,577	3,040,291
Excess of revenue over expenses	500,751	87,168

For purposes of the statement of revenue, expenses and changes in net assets, the operating cost reimbursements from PEO have been eliminated. The portion of costs allocated to PEO is reallocated from building operations to occupancy costs.

	2012	2011
	\$	\$
Building revenue		
per above	3,849,328	3,127,459
Eliminated PEO	(1,001,307)	(773,079)
	2,848,021	2,354,380
Building expenses		
per above	3,348,577	3,040,291
Eliminated PEO	(1,001,307)	(773,079)
	2,347,270	2,267,212

6. BUILDING FINANCING

In 2009, the association financed \$14,100,000 of the cost of its building acquisition with a credit facility from the Bank of Montreal, Capital Markets Division. The facility is secured by a first mortgage on the property located at 40 Sheppard Avenue West, a general security agreement, and a general assignment of tenant leases. The facility is repayable in monthly installments of principal plus interest maturing on March 11, 2019, and bears a floating interest rate based on variable bankers' acceptances. The balance outstanding at December 31, 2012 is \$11,100,000.

Principal repayments are due as follows:

	\$
2013	854,000
2014	878,000
2015	901,000
2016	928,000
2017	952,000
2018-2019	6,587,000
	11,100,000

The association has entered into a swap agreement related to this loan, whereby the floating rate debt is swapped for a fixed rate debt with an interest rate of 4.95 per cent and settled on a net basis. The notional value of the swap is \$14,100,000. The start date of the swap was March 11, 2009, with a maturity date of March 11, 2019.

7. EMPLOYEE FUTURE BENEFITS

The association's pension plans and post-retirement benefits plan covering substantially all employees (full-time and retirees) are defined benefit plans as defined in section 3461 of the CICA handbook. The pension plans provide pension benefits based on length of service and final average earnings. The post-retirement benefits plan provides hospitalization, extended health care and dental benefits to active and retired employees. Participation in the pension plans and benefits plan (for post-retirement benefits) has been closed to all new employees as

of May 1, 2006. All employees joining after this date have the option of participating in a self-directed defined contribution plan. During the year, the association recognized \$129,442 (2011–\$107,730) in employer contributions to the self-direct defined contribution plan.

The funded status of the association’s pension plans and post-retirement benefit plan using actuarial assumptions as of December 31, 2012, was as follows:

	Basic pension plan	Supplemental pension plan	Other non-pension benefit plan	Total
	\$	\$	\$	\$
Accrued benefit obligation	(22,851,900)	(1,143,700)	(11,018,900)	(35,014,500)
Plan assets at fair value	16,698,700	1,591,300	-	18,290,000
Funded status,				
plan surplus (deficit)	(6,153,200)	447,600	(11,018,900)	(16,724,500)
Unamortized transitional asset (obligation)	(114,100)	105,700	454,300	445,900
Unamortized net actuarial loss	6,711,700	343,400	2,293,900	9,349,000
Accrued benefit asset (liability)	444,400	896,700	(8,270,700)	(6,929,600)

Details of the accrued benefit obligation are as follows:

	Basic pension plan	Supplemental pension plan	Other non-pension benefit plan	Total
	\$	\$	\$	\$
Accrued benefit obligation, beginning of year	(19,642,086)	(989,268)	(10,761,782)	(31,393,136)
Current service cost	(800,945)	(38,100)	(148,300)	(987,345)
Contributions by the employees	(242,025)	-	-	(242,025)
Interest cost on accrued benefit obligation	(914,427)	(45,000)	(488,000)	(1,447,427)
Benefit payments	486,920	54,361	130,500	671,781
Actuarial gain (loss) on accrued benefit obligation	(1,739,337)	(125,693)	248,682	(1,616,348)
Accrued benefit obligation, end of year	(22,851,900)	(1,143,700)	(11,018,900)	(35,014,500)

The plan expense for the year is determined as follows:

	Basic pension plan	Supplemental pension plan	Other non-pension benefit plan	Total
	\$	\$	\$	\$
Current service cost	801,000	38,100	148,300	987,400
Interest cost on accrued benefit obligation	914,300	45,000	488,000	1,447,300
Expected return on plan assets	(910,000)	(46,500)	-	(956,500)
Amortization of transitional obligation	(22,800)	26,500	90,900	94,600
Amortization of net actuarial gain	460,800	14,400	183,300	658,500
Benefit expense	1,243,300	77,500	910,500	2,231,300

FINANCIAL STATEMENTS

The funded status of the association's pension plans and post-retirement benefit plan using actuarial assumptions as of December 31, 2011, was as follows:

	Basic pension plan	Supplemental pension plan	Other non-pension benefit plan	Total
	\$	\$	\$	\$
Accrued benefit obligation	(19,642,086)	(989,268)	(10,761,782)	(31,393,136)
Plan assets at fair value	14,009,400	1,477,968	-	15,487,368
Funded status, plan surplus (deficit)	(5,632,686)	488,700	(10,761,782)	(15,905,768)
Unamortized transitional asset (obligation)	(136,894)	132,200	545,332	540,638
Unamortized net actuarial loss	6,111,605	277,630	2,725,756	9,114,991
Accrued benefit asset (liability)	342,025	898,530	(7,490,694)	(6,250,139)

Details of the accrued benefit obligation are as follows:

	Basic pension plan	Supplemental pension plan	Other non-pension benefit plan	Total
	\$	\$	\$	\$
Accrued benefit obligation, beginning of year	(17,698,941)	(889,264)	(9,261,067)	(27,849,272)
Current service cost	(721,794)	(23,298)	(354,577)	(1,099,669)
Contributions by the employees	(226,788)	-	-	(226,788)
Interest cost on accrued benefit obligation	(943,417)	(46,499)	(501,396)	(1,491,312)
Benefit payments	1,128,560	53,735	130,482	1,312,777
Actuarial gain (loss) on accrued benefit obligation	(1,179,706)	(83,942)	(775,224)	(2,038,872)
Accrued benefit obligation, end of year	(19,642,086)	(989,268)	(10,761,782)	(31,393,136)

The plan expense for the year is determined as follows:

	Basic pension plan	Supplemental pension plan	Other non-pension benefit plan	Total
	\$	\$	\$	\$
Current service cost	721,794	23,298	354,577	1,099,669
Interest cost on accrued benefit obligation	943,417	46,499	501,396	1,491,312
Expected return on plan assets	(937,795)	(47,661)	-	(985,456)
Amortization of transitional obligation	(22,815)	26,500	90,889	94,574
Amortization of net actuarial gain	116,413	-	113,825	230,238
Benefit expense	821,014	48,636	1,060,687	1,930,337

The employer contributions to the plans amounted to \$1,551,937 (December 31, 2011–\$1,468,005; January 1, 2011–\$847,606). The increase in contributions reflects the most recent actuarial valuation performed as at January 1, 2011.

The significant actuarial assumptions adopted in measuring the association's accrued benefit obligation are as follows:

	Basic pension plan	Supplemental pension plan	Other non-pension benefit plan
	%	%	%
Discount rate	4.00	4.00	4.00
Expected long-term rate of return on plan assets	5.50	2.75	n/a
Salary projection	3.00	3.00	n/a
Medical benefits cost escalation			
Hospitalization			(a)
Extended health care			(b)
Dental benefits cost escalation			(c)

- (a) 6.75 per cent cost escalation in fiscal 2013, decreasing 0.75 per cent per year, until an ultimate rate of 5 per cent per annum
- (b) A 9 per cent cost escalation in fiscal 2012, decreasing 1.00 per cent per year, until an ultimate rate of 5 per cent per annum
- (c) A 4.0 per cent cost escalation per annum

8. NET ASSETS

The net assets of the association are restricted to be used at the discretion of council and includes the association's investment in capital assets of \$25,367,068 (December 31, 2011–\$24,978,779; January 1, 2011–\$15,821,805).

9. COUNCIL DISCRETIONARY RESERVE

The discretionary reserve is an internal allocation from the operating reserve used at the discretion of council to fund expenses related to special projects approved by council.

Expenditures from the discretionary reserve were as follows:

	2012 Actual \$	2011 Actual \$
Legal reserve, Elliot Lake/other	73,875	6,502
Elections webcasting	23,370	-
Emerging Discipline Task Force	14,074	62,608
EWB sponsorship	7,417	-
Overlapping Practices Committee	14,084	-
Experienced Practitioners Task Force	3,600	-
Professional Technologist Task Force	1,517	148
Repeal Industrial Exception Task Force	1,355	88,020
National Framework Task Force	347	9,061
Referendum	-	117,437
Global Engineering Workshop	-	23,064
Complaints and Discipline Task Force	-	14,927
2011 transition team	-	6,045
Licensed Specialties Task Force	-	3,504
Engineering and Natural Science Task Force	-	1,020
Building Development Committee	-	656
PEO license plate program	-	(8,981)
	139,639	324,011

10. WRITE-OFF OF BUILDING IMPROVEMENTS

During 2012, previously capitalized building improvement costs with a net book value of \$Nil (December 31, 2011–\$945,247) were written off. The improvements were incurred in 2009 and 2010 in order to facilitate the move from 25 Sheppard Avenue West. Management has determined that there is no ongoing benefit arising from these costs.

11. FULL-TIME SALARIES AND BENEFITS

During the year, the association incurred a total of \$10,525,793 (December 31, 2011–\$9,817,995) for salary and benefits costs for its full-time staff, of which \$42,268 (December 31, 2011–\$158,409) was directly attributable to special projects approved by council and disclosed under the council discretionary reserve.

12. CHANGE IN NON-CASH WORKING CAPITAL ITEMS

	2012 \$	2011 \$
Accounts receivable	763,559	(840,272)
Prepaid expenses	38,770	(75,388)
Accounts payable and accrued liabilities	(364,485)	(276,394)
Fees in advance and deposits	315,021	(106,281)
	752,865	(1,298,335)

13. TRUST ACCOUNTS

The association maintains a separate bank account for the Council of Ontario Deans of Engineering. Cash totaling \$72,567 (December 31, 2011–\$75,111; January 1, 2011–\$73,297) is not reported on the association's balance sheet, as it is held in trust for the council.

14. COMMITMENTS

The association has obligations under non-cancelable operating leases for various service agreements. The payments to the expiry of the leases and agreements are as follows:

	\$
2013	298,000
2014	310,000
2015	265,000
	873,000

15. CHAPTERS OF THE ASSOCIATION

The financial information of the 36 chapters of the association has not been consolidated in these financial statements, as such information is considered to be insignificant. Furthermore, management believes that the effort and cost required to prepare financial statements from each chapter for consolidation purposes far exceed the benefits from doing so.

During the year, the association paid chapter expenses totaling \$590,794 (December 31, 2011–\$598,260), including \$388,540 (December 31, 2011–\$391,000) in chapter allotments and \$202,254 (December 31, 2011–\$207,260) in other disbursements to individual chapters. In 2012, the association also incurred additional costs of \$487,167 (December 31, 2011–\$499,302) related to chapter operations, including staff salaries and benefits, and for various support activities. These

amounts have been included in the various operating expenses reported on the statement of revenue and expenses and changes in net assets.

16. FINANCIAL INSTRUMENTS AND RISK MANAGEMENT

Fair value

The fair value of accounts receivable, accounts payable and accrued expenses approximates fair value due to the short-term maturities of these instruments. The carrying value of the long-term debt also approximates fair value as interest rates approximate market rates.

Interest rate risk

PEO is exposed to interest rate risk, which is the risk that the fair values or future cash flows associated with its investments will fluctuate as a result of changes in market interest rates. Management addresses this risk through use of an investment manager to monitor and manage investments.

Currency risk

Currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate as a result of changes in foreign exchange rates. PEO's bond fund, overseas equity fund and US equity fund investments include foreign currency investments, the value of which fluctuates in part as a result of changes in foreign exchange rates.

Liquidity risk

PEO's objective is to have sufficient liquidity to meet its liabilities when due. PEO monitors its cash balances and cash flows generated from operations to meet its requirements. As at December 31, 2012, December 31, 2011 and January 1, 2011, the most significant financial liabilities are: accounts payable and accrued liabilities, and long-term debt.

17. GOVERNMENT REMITTANCES

Accounts payables and accrued liabilities include \$208,275 (December 31, 2011—\$120,685; January 1, 2011—\$95,681), with respect to government remittances payable at year end.

CEO'S FINANCIAL REPORT

FOR THE YEAR ENDED DECEMBER 31, 2012

PEO generated an excess of revenue over expenses of \$1,537,541, before council discretionary reserve expenses, for the 2012 fiscal year, as compared to a budgeted surplus of \$501,573. Highlights impacting performance include continued growth in the P.Eng. membership, a strong, positive contribution of \$500,751 from building operations and significantly lower than planned costs as management undertook to control costs in light of economic conditions and building requirements.

The excess of revenue over expenses was reduced by council discretionary reserve expenditures of \$139,639. The investment in capital assets for the year was \$1,323,223 (\$10,624,786 in 2011) and the closing balance in net assets increased to \$15,618,145 in 2012.

REVENUE

Total revenue was \$23,229,133, which is 2 per cent below budget, due primarily to the inclusion in the budget of higher application revenue due to the repeal of section 12(3)(a) of the *Professional Engineers Act*, which will not occur until 2013. Approximately 62 per cent of revenue is comprised of P.Eng. licence revenue, which was consistent with budget expectations.

COST MANAGEMENT

Total expenses were \$21,691,592, which is \$1,515,099 or 7 per cent lower than budget. Major expense variances from budget are as follows:

- Full-time staff salaries and benefits were \$902,875 lower than budget, offset somewhat by contractors and temporary staff costs, which were \$176,456 above budget;
- Costs for purchased services were \$206,345 lower than budget;
- Legal costs were \$155,755 lower than planned;
- Amortization was \$133,671 lower than planned;
- Professional development costs were \$111,945 lower than budget; and
- Recognition, grants and awards expenses were \$91,319 lower than budget.

2012 BUDGET VARIANCES BY BUSINESS UNIT

Corporate Services

Expenditures were \$1,050,639 or 9 per cent below budget. Variances include lower than planned retiree and future benefits costs (\$553,111), based on an actuarial valuation at December 31, 2012; lower than planned amortization costs (\$133,671), due to the completion of approved budgeted capital projects later in the year than planned and the delay of the exterior signage installation to 2013; lower training and development expenses across all departments (\$121,962); lower than planned costs for the Government Liaison Program (\$67,110) and the Ontario Professional Engineers Awards (\$52,937); lower than planned volunteer recognition costs (\$29,542), student member sponsorships (\$23,743) and other recognition costs (\$24,291); offset by higher than planned occupancy costs as PEO took on more space (\$84,871).

Executive

Expenditures were \$92,303 or 1 per cent below budget, resulting from lower than planned salaries and benefits (\$136,964), due to the resignation and retirement of a few staff, offset by higher than planned costs to represent PEO at functions (\$15,905) and higher than planned volunteer expenses (\$20,690) for attending PEO meetings and events, including the OSPE-PEO Joint Relations Committee, Audit Committee and National Framework Task Force.

Licensing and Finance

Expenditures were \$95,129 or 2 per cent higher than budget. Salaries and benefits costs were higher than budgeted (\$78,805), as an allocation for budgeted turnover did not occur. In addition, there were increased credit card commissions (\$45,129) as more members paid their membership fees online in 2012; higher than planned costs to prepare files for academic assessments (\$33,720); higher costs (\$28,813) for the final batch of permanent membership cards (cards will no longer be issued as of 2013); and higher costs to administer

CEO'S FINANCIAL REPORT



exams (\$23,795), offset by below-budget spending in police background checks (\$75,000), lower insurance costs relating to errors and omissions and director and officer liability (\$32,079), and lower costs to issue licences (\$21,079).

Regulatory Compliance

Expenditures were on budget in 2012. There were some vacancies in the business unit; however, contractors filled the positions on a temporary basis. As internal legal counsel was hired in December 2011, external legal costs were significantly reduced in 2012 as compared to 2011.

Tribunals and Regulatory Affairs

Expenditures were \$469,849 or 13 per cent below budget. Variances include lower than budgeted salaries and benefits (\$263,231), due to unfilled positions and maternity leaves during the year; lower than planned costs for the production, printing and mailing of *Engineering Dimensions* and the policy engagement section (OCEPP) within it (\$72,044); lower costs for tribunal operations (\$47,896), including independent counsel fees and lower volunteer expenses when conducting hearings and other matters; lower than budgeted advertising (\$23,008); and lower legal fees regarding external legal opinions for discipline matters, act regulations, practice standards and other matters (\$49,856).

Council-directed initiatives

For 2012, the net expenditures for the projects approved by council amounted to \$139,639. This figure includes \$73,875 for legal fees primarily for the Elliot Lake Commission of Inquiry, as legal costs associated with the Adams' judicial review legal challenge were almost fully covered by PEO's insurer; \$23,370 for the council elections webcast; \$14,084 for the Overlapping Practices Committee; \$14,074 for the

Emerging Disciplines Task Force; \$7,417 towards Engineers Without Borders sponsorship; \$3,600 for the Experienced Practitioners Task Force; \$1,517 for the Professional Technologist Task Force; and \$1,702 for various other task force work.

Staff and volunteers contributed in carrying out these council-directed initiatives. Included in the projects listed above is a total of \$42,268 in staff salaries and benefits costs directly attributable to these initiatives.

Building operations

The building generated \$3,849,328 in revenue, including PEO's share of recoverable expenses, but excluding base rent if PEO had paid market rent for its space. Total recoverable expenses were \$2,421,507 and other expenses totaled \$927,070, thereby creating an excess of revenue over expenses of \$500,751 (after all expenses, including loan interest), which was \$33,205 or 6 per cent lower than budget. Total revenues and total expenses came in slightly ahead of budget by 3 per cent and 2 per cent, respectively. Other expenses were \$79,662 higher than budget due to higher leasing and legal fees to renew tenants. PEO's share of recoverable expenses totaled \$1,001,307, and these costs were reclassified from building operations to occupancy costs in the financial statements. Since PEO is a not-for-profit organization, it received a preferred property tax rate (residential rate instead of commercial rate), which resulted in a realty tax rebate of \$176,000 in 2012, thereby reducing PEO's overall occupancy cost. Total occupancy costs for 2012 were \$846,281, which included storage and other occupancy costs. PEO's total accommodation expense (including interest) was \$1,406,705.

PEO occupied a total of 41,409 square feet at December 31, 2012. The market rent of this space is \$19.50 a square foot and operating costs are \$19.40 a square foot. Therefore, PEO's equivalent costs for rent and operating costs would be \$1,610,810 for 2012, leading to a net value of ownership estimate of \$204,105 for 2012.

CAPITAL EXPENDITURES

Capital expenditures for the year totaled \$1,323,223 and were 1 per cent below budget.

The largest capital purchase made in 2012 was for \$619,207 for the audio-visual (AV) equipment that was installed on the eighth-floor interim coun-

WHOM TO CONTACT AT PEO

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REGULATORY PROCESS		EXT
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Linda Latham, P.Eng.		1076
Manager, complaints and investigations		
Ken Slack, P.Eng.		1118
Deputy registrar, licensing and finance		
Michael Price, P.Eng., MBA, FEC		1060
Manager, admissions		
Moody Farag, P.Eng.		1055
Manager, licensure		
Pauline Lebel, P.Eng.		1049
Manager, registration		
Brian MacEwen, P.Eng.		1056
Examinations administrator		
Anna Carinci Lio		1095
Deputy registrar, tribunals and regulatory affairs		
Johnny Zuccon, P.Eng., FEC		1081
Director, policy and professional affairs		
Bernard Ennis, P.Eng.		1079
Manager, policy		
Jordan Max		1065
Program manager, OCEPP		
Catherine Shearer-Kudel	416-224-1100 ext.	1204
Manager, tribunal office		
Salvatore Guerriero, P.Eng., LLM		1080
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Chief administrative officer		
Scott Clark, B.Comm, LLB, FEC (Hon)		1126
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Jeannette Chau, MBA, P.Eng.	647-259-2262	
Manager, EIT programs		
Manoj Choudhary, P.Eng.		1087
Director, people development		
Fern Gonçalves, CHRP		1106
Recognition coordinator		
Olivera Tosic, BEd	416-224-1100 ext.	1210
Committee/volunteer coordinator		
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Matthew Ng, P.Eng., MBA		1117
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Jennifer Coombes		1062
Manager, communications		
David Smith		1068

cil chamber, the seventh-floor tribunal hearing room and the ERC interview meeting rooms. AV features include microphones and overhead speakers, integrated audio-conferencing, audio and video recording in all areas, webcasting capabilities in the interim council chamber and tribunal hearing room, and a video-conferencing facility in one of the ERC interview meeting rooms

PEO also completed building improvements totaling \$264,663, mainly for work with Intercede, including the renovation of Suite 102, additional moveable partitions and other leasehold improvements.

PEO invested \$219,215 in computer hardware and software during 2012, completing software projects such as a website infrastructure upgrade and enhancements to the online volunteer and awards application system developed in 2011. PEO also continued to invest in development hardware to enhance council and committee automation so that these members could securely access all relevant materials in an electronic format, and enable virtual meetings.

PEO invested \$151,224 in base building improvements in 2012, focusing on security upgrades, mechanical retrofits and ground-floor corridor enhancements. These improvements are all recoverable from tenants over time.

The remaining \$68,914 of capital expenditures was made for furniture, equipment and for signage work, which commenced at the end of 2012. The installation of the exterior signage was completed in January and February of 2013 and 40 Sheppard West can now be identified as the "Professional Engineers" building. The signage includes two roof-level signs on the building's south and east faces that read "Professional Engineers," the street address above the main building entrance, and a polished aluminum monument sign with a concrete base at street level displaying the PEO logo. All signs are lit for night viewing. The total cost of the signage was budgeted at \$250,000 and came in at just under \$194,000 in 2013.

PEO incurred no additional debt from its capital expenditures in 2012 as they were funded from PEO's cash reserves.

CONCLUSION

The association has managed its affairs responsibly and has produced a sizable surplus for the year, leaving 2012 with a healthy reserve to carry out its regulatory mandate in the public interest. Σ

[DATEPAD]

MAY 2013



MAY 29-JUNE 1

Canadian Society for Civil Engineering 2013 Conference, Montreal, QC
www.csce2013.ca

JUNE 2013

JUNE 2-4 2013 Society of Manufacturing Engineers Annual Conference, Baltimore, MD
www.sme.org/conference



JUNE 2-5 IEEE Electrical Insulation Conference, Ottawa, ON
www.ieee.org

JUNE 3-7 ASME Turbo Expo, San Antonio, TX
www.asmeconferences.org/TE2013

JUNE 4-6 Canada Green Building Council National Conference & Expo, Vancouver, BC
www.cagbc.org

JUNE 4-6 Western Manufacturing Technology Show, Edmonton, AB
wmts.ca

JUNE 5 Fundamentals of Accounting & Finance for Engineers (course), Mississauga, ON
www.ospe.on.ca

JUNE 10-13 RAPID 2013 Conference & Exposition, Pittsburgh, PA
rapid.sme.org

JUNE 10-14 ASME 2013 Manufacturing Science & Engineering Conference, Madison, WI
www.asmeconferences.org/MSEC2013

JUNE 10-14 IEEE 25th Symposium on Fusion Engineering, San Francisco, CA
www.ieee.org

JUNE 12-13 4th Annual Smart Grid Modernization Summit, Toronto, ON
www.smartgridsummit.ca



JUNE 17-20 Canadian Engineering Education Association Annual Conference, Montreal, QC
www.ceea.ca

JUNE 24-26 International Conference on Information Society, Toronto, ON
www.ieee.org

JUNE 26 How Engineers Can Build Better Business Cases—Accounting (course), Mississauga, ON
www.ospe.on.ca



JUNE 26-29 ASME 2013 Summer Bioengineering Conference, Sunriver, OR
www.asmeconferences.org/SBC2013

JULY 2013

JULY 3-4 Art of Management & Spectacular Leadership (course), Toronto, Mississauga and Markham, ON
www.ospe.on.ca

JULY 7-10 Conference for Interdisciplinary Engineering & Canadian Society for Bioengineering AGM, Saskatoon, SK
www.csbe-scgab.ca/saskatoon2013

JULY 8-12 Management Essentials (course), Toronto, Mississauga and Markham, ON
www.ospe.on.ca



JULY 14-19 ASME 2013 Summer Heat Transfer Conference, 7th International Conference on Energy Sustainability, & 11th Fuel Cell Science, Engineering & Technology Conference, Minneapolis, MN
www.asmeconferences.org/ht2013

JULY 21-25 2013 IEEE Power & Energy Society General Meeting, Vancouver, BC
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Jason Lee holds a B.A.Sc. in Civil Engineering from the University of Toronto (2001) and an M.Sc. (Eng.) in geotechnical engineering from Queens University (2002). He has been with Thurber since 2002, providing geotechnical design and management services. His expertise includes slope stability, soil treatment, site investigation, instrumentation and foundation design.



Weiss Mehdawi, P.Eng., Principal

Weiss Mehdawi holds a B.Eng. degree in Civil Engineering (2006) and an M.Eng. (2008) from Ryerson University. He has been with the firm since 1994, and provides geotechnical and material engineering services. His expertise includes management and implementation of construction QA/QC testing as well as materials engineering services for granular, cementitious, and asphalt materials.



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[LETTERS]



I PREFER PAPER

I have elected to continue receiving *Engineering Dimensions* by mail despite the environmental issues (I am a tree hugger) and the financial costs (I am fiscally tight). Like too many self-governed and ungoverned NGOs and government agencies, there appears to be no fiscal responsibility to the payer, be they taxpayer or member. Here I am thinking of Ornge and eHealth, among others. I include PEO in this group. PEO is concerned about reducing costs where it concerns communication to members but appears to have no compunction about spending money on itself. Here I am thinking about the tens, if not hundreds, of thousands spent on legal costs for two recent incidents.

One appeared to involve the hurt feelings of the chief elections officer by engineer "A." This required 18 pages of text in Gazette. The other involved some council member resigning and another councillor disagreeing. I have yet to wrap my head around this one. Please, would the participants give their heads a serious shake? I am also thinking about our "Crystal Palace," the building at 40 Sheppard Avenue West. I have not visited it yet but I imagine mahogany wood paneling and plush carpets throughout, massive teak desks, desk-side tea service, a smoking room with "old boy" club chairs, and on and on and on. We obviously need a name for our "Crystal Palace." PEO Palace is too mundane. Any suggestions?

So, if PEO can, in my opinion, waste millions, then I want a few dollars wasted on me. I will reduce my environmental footprint elsewhere in contrition.

David Moffat, P.Eng., Toronto, ON

A SKEPTIC'S VIEW

It was with considerable interest that I read the article on climate change risk in the January/February 2013 issue of *Engineering Dimensions* ("Shedding new light on the nature and inevitability of risk," p. 42). As a chemical engineer who has had a mixed career in industry and academe, I became profoundly interested in the issue of climate some 40 years ago. I remember well the new Ice Age worries in the '70s and have closely followed the evolution of the current climate hysteria of late. The climate is changing; it has been changing ever since the Earth acquired an atmosphere and will continue to do so. There have been periods where temperatures have risen and periods where they have fallen. Currently, there has been no significant change in global temperature for the past 17 years, so if the permafrost is melting it is most likely natural causes.

Sea levels are not rising and it is foolish to attempt to relate extreme weather to climate change—there simply is no connection. There was an excellent article by Lawrence Solomon in the *National Post* on January 30 where he points out some of the current facts and thoughts on this issue. One interesting point is his reference to Abdussamatov's theories that the Earth may very likely be in for a 40-year-long, mini Ice Age akin to what occurred during a similar solar period called the Maunder Minimum.

It is ridiculous to call carbon dioxide a pollutant. Without CO₂, there would be no photosynthesis, animals or people. My main concerns, in addition to the enormous amount of misinformation in the media, are some of the moves that governments have made in an attempt to cope with this alleged catastrophe which, according to Prince Charles, means we only have 99 months to deal with it.

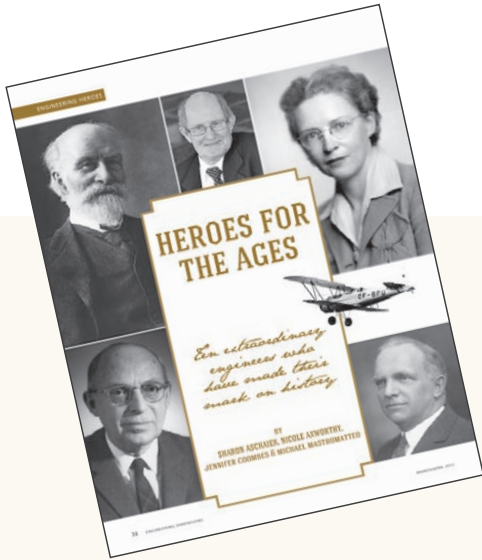
Windmills and solar cells are essentially a scam—they all require standby thermal power plants kept in an extremely inefficient spinning mode for the frequent time when the wind doesn't blow or it is night time. James Lovelock, the scientist of the Gaia hypothesis, calls windmills similar to the stone statues on Easter Island, a memorial to a failed idea.

The other ridiculous idea is corn-based ethanol as a motor fuel. This process produces more CO₂ than it saves and results in an inferior fuel. I don't hear much about where the electricity to charge all these lithium batteries in the electric cars comes from. Most likely it originates from a fossil fuel plant.

What I see as a likely future is a major shift to methane, since it appears as if shale gas reserves are simply enormous. The other little understood issue is that there is another enormous supply of methane tied up as methane hydrate, which surpasses all the known shale gas reserves. A recent demonstration has been successful in recovering methane from hydrates.

Engineering Dimensions, I presume, should represent an engineering perspective of issues, such as climate change. I submit my admittedly skeptic's view of the current situation.

Barrie Jackson, P.Eng., Perth, ON



THEY WERE HEROES

I have just finished reading *Engineering Dimensions'* March/April 2013 issue, particularly the article "Heroes for the Ages" (p. 24).

I graduated from the University of Toronto in mechanical engineering in 1969 and was privileged to have been there when James Ham, P.Eng., was the dean of applied science and engineering. I met him on more than one occasion. I also took first-year electrical engineering in 1965 from a lady professor in the old SPS building (the year before it was taken down).

Also, I took third-year fluid mechanics (1968) from professor G. Ross Lord, P.Eng. And yes, I was living in Etobicoke with my parents when Toronto was hit by Hurricane Hazel in 1954 (my father went out with other civil defense volunteers to help rescue less fortunate Torontonians).

So yes, I can certainly understand how these two gentlemen were included. Perhaps you could sift through all the future correspondence on this article and perhaps report on 10 or more heroes as decided by people sending in their own ideas.

Alan Tyrrell, P.Eng., Elora, ON

TIME TO STANDARDIZE WITH METRIC

I was at the East Central Region Congress meeting at our new PEO headquarters at 40 Sheppard Avenue West on March 9. Our new place looks nice. While we did spend a lot of money, it does show and it is good if the headquarters of PEO is a fine showcase of Canadian engineering at work.

I noticed a couple of things that surprised me. In the washroom, the flushing valves have a nice heavy stainless steel plaque that says something like this: "This valve saves thousands of gallons of water each year." When we went back to the meeting room, I then noticed that the room temperature transmitter displayed temperature in degrees Fahrenheit. What I am wondering is: Should we not use metric units to appear to be Canadian and up to date? In other words, the plaque should say litres not gallons and the temperature should be in Celsius not Fahrenheit.

I suspect both of these items came from the US, or Usonia, as Frank Lloyd Wright liked to call it. They are probably standard items in the US because it, along with Myanmar (formerly Burma), is the only country on the planet that is not using metric units. We should, I think, look Canadian in our engineering work, especially in our own head office. Of course, the minute you see gallons you have to ask, Is it imperial gallons or US gallons? This is another good example of why we should not use imperial units because they are not really a system but a confusing collection of convoluted units. We should try to make it look Canadian. I like to think that someday the US will be metric but I am not holding my breath. The use of metric allows us to trade with the whole world.

John Bailes, P.Eng., secretary, East Toronto Chapter, PEO

CORRECTION

In our March/April 2013 issue, we incorrectly identified the riding of MP Corneliu Chisu, P.Eng., as Pickering-Scarborough. It is, in fact, Pickering-Scarborough East.

Letters to the editor are welcomed, but should 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.

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