The official publication of Engineers Geoscientists Manitoba

THE KEYSTONE PROFESSIONAL

SPRING 2016

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1 Canadian Cancer Statistics, 2013. 2 Heart & Stroke Foundation Statistics, 2013. 3 Colleen Nelson B.Ed, PBCE, "The Financial Hardship of Cancer in Canada: A Literature Review," Canadian Cancer Society, 2010.

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The Keystone Professional Committee would like to hear from you. Please email your comments to: *amoore@apegm.mb.ca.* Members are also encouraged to submit articles and photos on topics that would be of interest to the membership.

THE KEYSTONE PROFESSIONAL

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Lesley McFarlane P.Eng., President 2015-2016

Change as a Journey

If you logged into our Association website recently, you will have noticed a significant change: our Association's name has been updated to reflect the new working name which we announced last September – Engineers Geoscientists Manitoba. Some changes such as our name on the website are binary, but most changes involving people are gradual. The work of Council fits into the latter category.

Each year following the AGM, Council is filled with energy, and the anticipation of a productive year ahead fulfilling the needs of our Association and the public of Manitoba – our owners. Bestowed with input from a lively AGM, your Council spent a reflective weekend together last November contemplating the way forward, and the changes upon which we are to embark, in a true spirit of servant leadership. We emerged from that weekend with a renewed commitment to strive for change, and a firm plan to achieve it.

The world today is different than it was even a decade ago. Citizens are armed with vast amounts of information that gives them the power of knowledge in all aspects of their lives. Think of car buying 10 years ago, and compare that to the experience today. Now, we have websites where we can learn everything about our preferred vehicle before we step onto the lot, including the mean price and standard deviation, based on hundreds of purchases of that same vehicle.

The use of technology has driven an expectation of greater transparency in any area in which we invest, including our Association. The balance of power is shifting towards consumers, and with it an expectation of more communication.

Council recognizes this call from our membership for greater awareness of the changing needs of our Association. The potential exists for us to fulfill the needs of our regulatory requirements for the benefit of Manitobans, along with improved transparency, and greater focus on member services and engagement. The approach Council is taking to attain this is to recommit ourselves to excellence in governance. We use an industry standard governance model, developed for non-profit organizations such as our Association, which helps Council define what End objectives we seek. The Ends are then used to communicate our expectations to our Association staff.

There are aspects in which we have not exercised the full power of governance in the past; fundamental is a review of our Ends. Reviewing the Ends should be conducted annually, but we have not done so in several years. Restarting the process will take energy to overcome inertia, but it will get easier once we do it annually.

Council will be seeking inputs over the coming months, as we prepare to refresh our Ends. If you are interested in participating in this important work, please contact me or any member of Council to let us know.

Ownership Linkage also provides inputs for this process. I am pleased to say that we are receiving positive feedback from some key members of our community, whom we asked to join us on our Ownership Linkage Committee of Council.

Council recognizes the significant responsibility you have entrusted to us, and we hold ourselves accountable to deliver. We will also not shy away from making difficult decisions, which may not be popular with some members, if we feel it necessary to fulfill our role as a regulatory body. But we will work to communicate better the rationale in our decision making, as much as possible, as we evolve our Association to meet the changing needs of our owners.

As always, I encourage member feedback, by email, at *lmcfarl@mts.net*.

AGM Update

In accordance with our By-Laws, Section 5.1.4, two resolutions were put forward at the AGM in October 2015. A Task Group of Council has been created to evaluate, and recommend to Council, a response to each resolution. These Task Groups are working diligently to conclude these activities in a timely manner, while ensuring careful consideration takes place. The By-Laws state that Council shall report on the disposition of resolutions at the next annual general meeting. Council is committed to providing a response to the membership. To provide feedback or inquire further, please contact President Lesley McFarlane at *lmcfarl@mts.net*.


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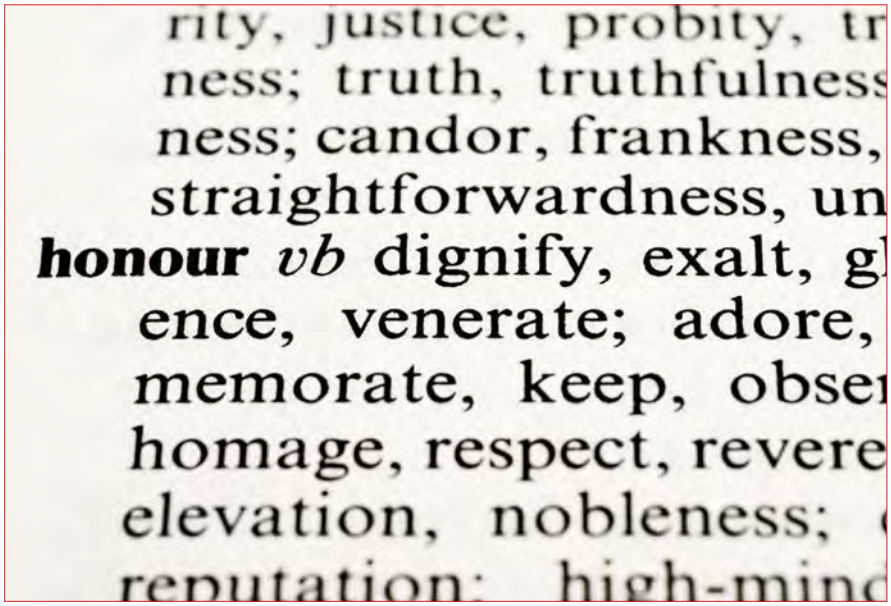
G. Koropatnick, P.Eng., FEC, CEO & Registrar

We Have an **Honour System**

Honour is an antique word.

It doesn't get used much these days. I still spell it the way we did back in elementary school – with a "U." The American spellchecker in my word processing software says I'm spelling the word incorrectly, but I keep inputting the "U" anyway.

What is honour? The Internet tells me that honour is "high respect or esteem." To be held in high honour is to be regarded as highly valued, recognized, thought of with distinction, an example of something really good.



Personal Honour

Being an honourable person means having a strong moral code, displaying candor, the state of being whole, and undivided. In the professions we call it "good character." Personal honour is the belief about oneself that at the end of the day – you're okay. For many years I have believed that at the end of the day when you go home, you'd better have your personal honour with you, because some days that's all you've got. They don't often pay you more, say "thank you" or acknowledge that you're hard-working and loyal day after day. No, some days, all you've got is your personal honour; that sentiment that says "no matter what, I'm going to come back tomorrow and work hard again." Personal honour. For me, that's enough.

Honour System

We have an honour system in the professions. The public trusts that good engineering and good geoscience will be done in the province by members of Engineers Geoscientists Manitoba. Almost 100 years of history shows

that we can be trusted. However, in Quebec, would the Charbonneau Commission have been necessary if everyone acted honourably? That's a tough question. Honour or lack of it can occur anywhere; even in Manitoba. We need to be on guard.

Some say that an honour system is weak because no one is keeping track of anyone. It's an open system fraught with deficiencies, and a lack of accountability. Actually, my experience has been the opposite. An honour system works for honourable people. No one has to explain the rules. Yes, it works for honourable people. Those who are not honourable stick out. It's obvious. Many fit in because of their personal honour. Some stick out because of the lack of it. Many years ago, once a year I would host a staff training day for a large group of employees. I would explain how dishonourable employees would stick out and be obvious in our department. It always got a negative reaction from 2 - 3% of employees. Can you guess which ones they were? It was easy. I could predict which employees would have high absenteeism, poor work performance, illegitimate injury claims, workplace theft and other matters related to their lack of personal honour. It was obvious – they stuck out when others happily fit into the honour system I was promoting.

James Bond

Have you seen the latest Bond movie *Spectre*? It's the usual action-packed saga of good versus evil. I liked it. In the end when Bond has the opportunity to kill the villain Blofeld at point-blank range, he doesn't. Do you know why? He displays a deep sense of personal honour. He could pull the trigger and snuff out his archenemy, but he doesn't. Instead, he chooses to leave judgment for "HMG" – Her Majesty's Government. Tossing his gun away, he walks off with his personal honour intact.

ProDev

ProDev is an honour system. You can follow it with honesty and integrity or you can cheat. It's up to you. How would anyone know if a member lies on their ProDev log? The Continuing Competency Committee is mandated to follow-up on practicing members; checking every January 1 to see if they are meeting the requirements. However, it would take a huge amount of effort to catch the ones who are cheating. Why? Because there are thousands of members and ProDev is an honour system. Do some members cheat? I don't know. But I'm a realist and I expect that some do. They only cheat themselves. They disregard the important role personal honour plays in their professional practice, and life in general. Be careful. You may be tempted to cheat, but go for honour, instead. At the end of the day, it's worth it.

Your feedback is welcomed. If you have any thoughts on anything in the magazine, please email me at *gkoropatnick@apegm.mb.ca*.

Engineering PHILOSOPHY 101

Dr. M.G. Britton,
P.Eng. FEC

About other people's opinions

From the perspective of most engineers, design is a fundamental component of our profession. In defence of our position, we often refer to what we do as engineering design, acknowledging that others 'design' within the scope of their respective activities. In our case, we think of design as both a verb (the process of creating 'something' that will serve a need), and a noun (the 'something' that we create). Design provides a base that permits 'something' to be build, manufactured, or used.

I would suggest that very few engineers spend much time thinking about the philosophy of design. On the other hand, some philosophers see 'design' as a valid area of inquiry. Glenn Parsons' book, *The Philosophy of Design*[1], is a case in point. It warrens some attention.

Before discussing Parsons's opinions, however, it is probably worth considering some abbreviate extracts from *Collins English Dictionary* relating to the discipline of Philosophy. As a field of study Philosophy is "the academic discipline concerned with making explicit the nature and significance of ordinary and scientific beliefs . . .". It is delivered through "the critical study of the basic principles and concepts of a discipline . . . ". From my view, as an outsider, their process of study seems to involve asking 'questions,' or stating 'positions,' relating to their area of study, and then seeking ways to improve those 'questions' or 'positions'.

Parsons's book grew out of a 'critical study' of design. It provides an opportunity to follow a philosopher's reasoning as he progresses from 'question' to 'question'.

> "Above all, we need to present our case to those who make decisions, and that case includes being able to refute questionable resources. Engineers are not philosophers, we are designers. We need to get our 'story' out there if we want to be able to contribute."

As a starting point, he notes that design is " . . . a kind of social practice with its main historical roots in the industrial revolution." Further he observes that ". . . *The Oxford English Dictionary* lists 16 different definitions for the English verb . . .". With this as a base, he chooses to define ". . . 'design' as the intentional creation of a new kind of thing". I don't see any reason to disagree thus far.

A page later, he has 'clarified' his position and states that ". . . design is essentially a conceptual or mental activity, distinct from the physical activity of making or building". With that as an extension, he now defines design as ". . . the intentional creation of a new kind of thing". After another 10 pages of 'logic' he concludes that ". . . Design produces items that have the primary function of altering the world, rather than explaining it". From my engineering point of view, I see expansion and qualification of his definition, that appear to do little more than place restrictions on the original concept. It is interesting, however, that by this point in the text he has established the practice of referring to persons involved in design as 'Designers'. This at least implies that he believes there is a distinct group of persons who 'do design'.

However, half a page later, Parsons begins his argument that **engineers do not design**. I will admit to being surprised by this development in his ". . . critical study of the basic principles and concepts of a discipline".

He defends his position by suggesting that ". . . the Designer's point of view on the object is that of the user . . . " while the engineer ". . . must often focus on elements that, although vital to the object's functioning, do not figure in the user's interaction with it . . .". I will admit to missing his point entirely. How on earth can the functioning of a product be less important than its appearance? It doesn't give me much faith in the '*critical analysis*' upon which this work was based. But I must note once again, that I bring an engineer's, not a philosopher's, perspective to these definitions.

There are always reasons why a train of thought takes a particular direction. But I do not understand why, after declaring the separation of engineering from design, Parsons goes on to decry the marginalization of design at universities where science has become[2] the prestige area. He then uses Simon's comment that ". . . academic departments that ought to be doing Design were instead doing pure science,

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such as materials research". To this engineer at least, this statement has a familiar ring relating to discussions about engineering education. I can only wonder why, if this is a valid reason for excluding engineers, it was not presented before making the pronouncement that engineers are not Designers. Is this a part of '*critical analysis*' or simple justification of a less than sound position?

By now, if you are still with me, most of you must be wondering where this 'rant' is headed.

The book (or more correctly the first third of the book) I have been discussing addresses a fundamental academic question regarding design philosophy. The book makes a point of dismissing engineers from the design community. It will no doubt be referenced by persons attempting to learn about design and the persons who are involved in the design process. The conclusions in the book now exist for consumption by the public. The book will affect how engineers are viewed by persons who are unfamiliar with our profession.

In my "Thoughts on Design" column elsewhere in this edition, I cited Douglas's and Papadopoulos's statement that "engineers are also beginning to realize how important it can be to educate those who make public policy decisions about technology". I believe they are correct. However, if we wish to 'educate' we need to be aware. We need to understand what is being said about us, and why. We need to know where we fit into the overall scene and what we can contribute. Above all, we need to present our case to those who make decisions, and that case includes being able to refute questionable resources.

Engineers are not philosophers, we are designers. We need to get our 'story' out there if we want to be able to contribute.

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[1] Parsons, Glenn, 2016 The Philosophy of Design. Polity Press, Cambridge CB2 1UR UK

[2] Simon, Herbert A. 1996 The Science of the Artificial. 3rd ed. MIT Press, Cambridge MA.

Thoughts on Engineering Design

. . . and issues of change

Dr. M.G. Britton, P.Eng. FEC

Change is not a new phenomenon, but the pace of change seems to be accelerating, and the phenomena that are driving change seem to be different. Given that design is both impacted by, and the cause of change, we need to pay close attention to developments that, until recently, might have been seen as outside of our normal sphere of interest.

I have observed many changes in engineering over the past half century. In academe, the relatively slow shift toward science based undergraduate curricula can be traced directly to the "space race" and the public belief that the awesome accomplishments were based entirely on science. As computing capacity shifted from punch cards to laptops, more complex analysis became routine in the design workplace. But these changes were relatively slow and one could adapt rather than undergoing almost instant change. I must admit that, as my years of experience increased, I sensed an increase in the rate of change. I began to wonder if my concerns were simply age related.

However, in 2010, I stumbled upon a book entitled *Citizen Engineer, A Handbook for Responsible Engineering*[1], my self doubt was, to some extent, eased. In the introduction to this book, Douglas and Papadopoulos offered the blunt observation that "Suddenly engineering is no longer solely concerned with finding a simple, elegant way to implement a set of design requirements". Their take on the changing world of engineering was based on their experience as engineers, and senior executives, at Sun Microsystems. Their position seemed to support my observations.

From my perspective, Douglas and Papadopoulos's concept of citizen engineering is founded on

circumstances that they observed in both their work place and the outside world that impacted their workplace. They state that "engineering itself is pure purpose – the application of knowledge to create something of value". But they caution that ". . . only you can define the requirements given your situation, . . ." and "Engineers have an ethical obligation . . .". This personal obligation is complicated by the fact that "New requirements are encroaching on the traditional tasks of engineering". Which leads to the need for us *". . . to educate those who make public policy decisions about technology"*.

Douglas and Papadopoulos have supported their case for responsibility in a clear, defensible manner. But it really isn't unique. The Definitions section of our Act says "practice of professional engineering" means any act of . . . that requires the application of engineering principles and that concerns the safeguarding of life, health, property, economic interests, the public interest or the environment". The introduction to our Code of Ethics notes that ". . . 'practitioners,' shall apply their specialized knowledge and skill at all times in the public interest, with honesty, integrity and honour, . . .". Isn't that basically the same thing, hidden in the legal language of Acts and Codes?

While Douglas and Papadopoulos speak to the need for change and suggest how engineers should react to change, one could argue that in they have simply presented a series of assumptions and observations that support their conclusions. But given that design is, for the most part, based on assumptions, isn't this a logical approach for a pair of engineers to take? Recent developments certainly seem to support their assumptions.

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"The impact of human activity on the world we live in has now been recognized and world leaders have declared that we must act. The days of "the solution to pollution is dilution" adage have been declared to be over."

From the perspective of engineering design priorities, one of the most significant potential drivers of change will turn out to be the December 2015 International Climate Agreement in Paris. The impact of human activity on the world we live in has now been recognized and world leaders have declared that we must act. The days of "the solution to pollution is dilution" adage have been declared to be over. While specific outcomes are not yet in place, we can be confident that different governments and their respective regulators will propose a myriad of solutions and constraints. We cannot, however, be confident that every proposal will make sense. In this emerging situation, engineers MUST take a lead role in this grand undertaking because not all proposed solutions will be technically, scientifically, or economically feasible. Change will, and should, happen with respect to our inputs to our environment. And as these new requirements evolve, engineers of all persuasions will be faced with a much broader range of design alternatives.

Talk of fundamental change can, and probably should, impact our individual comfort zones. But we must always remember that design causes change to happen, and design is what we are about. In order to take meaningful roles as leaders, we must believe, again from *Citizen Engineer*, that "Engineering – possibly more than any other profession – has the power to change the way we interact with the world". And just in case I have left the impression that all serious changes our profession will experience will relate to the environment, it is probably worth checking out a headline in the January 28, 2016 issue of *Canadian Consulting Engineer* magazine which notes that "New Canadian Building Codes have 400 changes". There are, no doubt, changes relating to environmental impact, but . . .

[1] Douglas, David and Greg Papadopoulos, 2010, *Citizen Engineer: A Handbook for Responsible Engineering*. R.R Donnelly, Crawfordsville, Ind.

John Guenther, P.Eng.

Dedicated volunteer, proud pop, Formula One fan

Imagine being sued – posthumously – for a project you worked on two decades ago. It's a scenario consulting engineers sometimes face in Manitoba; one that mechanical engineer John Guenther says happened to a peer early in his career. While John upholds his professional duty to safeguard the public, he sees merit in defining the duration of an engineer's liability.

Bringing this issue to government is one of his goals during his term as a Councillor with Engineers Geoscientists Manitoba. To that end, he's already joined a joint committee of engineers and architects (who are also liable in perpetuity) to explore the issue. He also hopes to raise it with Scott Sarna, Director of Government Relations for Engineers Geoscientists Manitoba.

John says he'd like to see the province adopt regulations that engineers in other jurisdictions adhere to, which are not unlike the kind other professionals follow – Accountants for example, are typically bound to a seven-year statute of limitations. "You still have to design to standards, which are always vetted by inspectors," says John. "But it gets rid of the issues that are not technical in nature, which, for a mechanical engineer such as myself, are sorted out in the first couple of years [after a project is completed]."

Professional fairness is about more than rules and regulations to the North Kildonan native, a father of two: son Joshua, and daughter Bethany. It's also about creating a shift within his profession's culture towards bona fide equality for women practitioners.

As more and more women, including, quite likely, his own daughter, pursue studies – and eventually careers – in science and engineering, John wants to see them valued for the quality of their work, without the distinction that they are "women engineers". "In all kinds of professions, I support [women]," says John, whose wife Helen was a resource teacher at an elementary school, adding, "An engineer is an engineer".

By day, John is a partner and senior mechanical engineer with Winnipeg-based Nova 3 Engineering Ltd. The company provides mechanical and electrical system expertise to a variety of clients, including architects and design-build contractors, in Manitoba and throughout Canada. When asked to explain the difference between his work and that of an architect he's quick with a response. "The architecture is the glitz that you see, the shell of the building," says John. "[We look after] all the stuff you don't see: the lighting, wiring, and plumbing."

John has been with Nova 3 since 1997 but admits working in the world of HVAC systems, pipes and wires was not the plan when he graduated from the University of Manitoba in 1986. He originally wanted to be an automotive engineer.

The lack of local opportunities, compounded by the need to pay the bills, coaxed John towards a job in air balancing, which involves measuring the effectiveness of HVAC systems. This exposed him to numerous construction projects, opened his eyes to a previously unexplored career opportunity, and taught him a valuable lesson: "Don't discount any experience," he says. "Something that was a stop-gap ended up being invaluable. It all comes in handy."

John is a car lover and a fan of open-wheel racing (he's been to F1 events in Montreal and Indianapolis). While the spectacle of watching narrowly spaced cars dart through corners or blitz down straightaways at high speeds might be the draw for

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"I believe that you only get out of a profession what you put into it. I've always been proud of being an engineer. [Volunteering] is one way I could give back."

many motoring fans, John is more fascinated by how these machines, with power plants close in scale to that of a Harley, generate such remarkable power. "To me, F1 cars and Swiss watches are the epitome of mechanical engineering," he says. "High performance out of a small package."

He may not have forged his career in the auto world, but he and his business partner support today's budding engineers involved with the University of Manitoba Student Chapter of the Society of Automotive Engineers International – UMSAE. In fact, says John, the newest hire at Nova 3 was part of that group and graduated in December 2015.

John is also a long-time volunteer with Engineers Geoscientists Manitoba, having spent more than a decade giving his time and talent to the Association. He says it's the least he can do for a career that has afforded him so much. "I believe that you only get out of a profession what you put into it. I've always been proud of being an engineer. This is one way I could give back."

Since childhood, John says he's always been fascinated with learning how things worked mechanically. Where classmates might have dabbled with DIY radio kits, he busied himself pondering the inner workings of gears, pulleys and trebuchets. What might he have done if he hadn't heeded the call of engineering? "Probably a wildlife biologist," he says. "I've always had a love of nature and photography."

Lindsay Melvin, P.Eng.

Creative problem solver, #wpgfringe faithful, engineering spokesperson

"Engineering is about problem solving." In a nutshell that is how Lindsay Melvin describes her profession.

But Lindsay, who is Section Head of Distribution Portfolio Management and Controls at Manitoba Hydro, admits that a lot of non-engineers she talks with often misunderstand how diverse her profession can be. Sure, engineering is technical in nature and rooted in science, but Lindsay says it is also a hotbed of creativity.

Think about it. Behind every contemporary problem solver, from Steve Jobs to Sarah Blakely, there is an army of engineers turning their creative vision into a solution – the Apple suite of products, Spanx – that enhance our lives in some way. In 2002, not long after she graduated from the University of Manitoba and started working at Hydro, Lindsay herself was tasked with creating a novel solution to a problem.

At the time she was working in Hydro's export power marketing group, whose focus on long-term sales meant they needed to make predictions about the electricity market outside Manitoba over an extended period of time. If a deal was in the works for a 10-year contract, how might a cycle of droughts affect water levels, and in turn, affect energy output or pricing? Lindsay created a model to simulate risk and to answer these questions. Lindsay says she is proud of the project because she took analysis and technical details and translated them into a layperson scenario that her marketing colleagues could really use. "It wasn't [just me] doing some hand waving," she says.

Outside of her involvement with Engineers Geoscientists Manitoba, Lindsay volunteers to support the promotion of engineering to school-age boys and girls who will be the future of the profession. She says that so much of our daily lives depend on engineers that their work can easily go unnoticed. But consider the facts: we trust that planes will fly and land successfully because of engineers. We trust that our PVR will record the final season of *Downton Abbey* also because of engineers.

Lindsay is passionate about showcasing the breadth of engineering's role in the world as a way to attract and retain future practitioners. She feels this prior volunteer work gives her a good foundation for her two-year term as a councillor with Engineers Geoscientists Manitoba, a role she says she is "super excited" about.

On the job, Lindsay is responsible for a group of nine project managers who oversee the planning, design, and construction of 400 active projects in Winnipeg, including distribution substations which need to be replaced to meet the city's burgeoning demand for electricity. To get a sense of the scope of this work, the substation portfolio of projects, alone will take six years to complete at a cost of roughly $470 million.

Juggling so many moving parts may seem daunting, but Lindsay says she thrives on the challenge. "I like that I never know what's going

Outside of her involvement with Engineers Geoscientists Manitoba, Lindsay also volunteers to support the promotion of engineering to school-age boys and girls who will be the future of the profession.

"I like that I never know what's going to happen [at work] on a daily basis or what problems I'll have to solve. I like that it's constantly changing."

to happen on a daily basis or what problems I'll have to solve," she says. "I like that it's constantly changing."

Outside of the office, going to new restaurants is one of Lindsay's favourite pastimes, as is the annual summer pilgrimage to the Winnipeg Fringe Festival. In spite of her busy work schedule, she maintains an active lifestyle playing Ultimate [Frisbee] year round, dancing, singing, and playing piano.

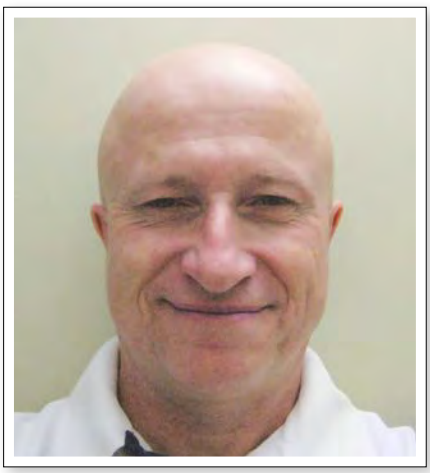
When asked what trends she's seeing in her profession or what sage advice she might offer to up-and-coming engineers, she cited the need to continually expand their skills. She returned to her own experience at Hydro developing the risk assessment model to illustrate her point. Through that experience, she tapped into all of the knowledge areas she was comfortable with, and then pushed the envelope as appropriate to deliver a solution to her organization. Good engineering is about constantly tinkering with that balance.

Lindsay says she knew from a young age she wanted to turn her love for science into something "applied". She found a home for that passion in engineering, earning both her undergrad and master's degrees at the U of M. She has since added an MBA.

While both her feet are firmly planted on a career path as an engineer, when asked what other profession she could have seen herself in, she suggested law with a bit of tongue-in-cheek humour. "Because I talk quite a bit."

Dave Owens, P.Geo.

Resourceful, respectful, "old rock kicker"



What do mosquito-infested forests, marauding black bears, and leaps of faith from the rung of a helicopter into a frosty cold bog have in common? If you are thinking the opening credits from *Survivorman*, guess again. They are all day-in-the-life experiences that exploration geologist Dave Owens has had working in the field.

Facing both beast and nature in remote regions in Manitoba has taught Dave, President and owner of MoGeotechnical Services Inc., the importance of being resourceful. He jokingly refers to himself as an "old rock kicker" who can remember the days when drafting was done with pencil and paper. But success, according to Dave, rests in his ability to adapt: whether that's meant swapping his pencil for a computer, or seeking new quarries of raw materials (like lithium for batteries) that fuel everything from Tesla cars to smart phones.

That nugget of advice is one Dave, a father of two, offers to any young practitioner who seeks his counsel. "Stay technically sound, stay [on top of] advances and improvements," says Dave. Technology is not the only realm where Dave sees the need for adaptation; it's also essential for geologists whose exploratory work often situates them on First Nations throughout Manitoba.

Growing up in Portage la Prairie, Dave says his parents regularly took kids into their home from northern First Nations communities. These experiences not only helped Dave forge friendships he might not otherwise have made, it also taught him about the need to learn and respect First Nations' culture and customs as part of best practices in geology or mining.

Much of his work required him to become an expert on mining, and exploration rights, as well as the pre-emptive Indigenous land rights that form the ground rules for where and how resources can be exploited on First Nation territory.

By combining this expertise with his experiences growing up with Indigenous kids, Dave helps all parties vested in a mining development to work towards a common goal. This includes everything from discussing the terms of a project to hiring First Nations tradespeople to do the work.

"If you communicate, it's great," says Dave. "There's a lot of stereotyped negativity. That really shouldn't exist."

Dave spent years in Thompson, where he targeted the Vale Inco 1-D deep-ore nickel reserves. If developed, this cache of an estimated ten million tons of nickel could deliver a significant economic boost to a community hit hard when Vale announced in 2010 the closing of its nickel smelter and refinery. The benefits of mining extend beyond the community it surrounds; it's also the basis for the symbiotic relationship between geology and engineering. As Dave succinctly explained. "Engineers can't do anything without a mine. Geologists can't do anything without an engineer."

With that relationship in mind, Dave says he hopes he can use his term as a Councillor to learn more about what Engineers Geoscientists Manitoba does and then, in turn, help the cause. "Every step of the way is an education," he says.

Dave has physically worked only in Canada, but has helped manage exploration in project locales around the world, including the U.S., Bulgaria, Mexico, South America, Mongolia, Australia, and Kazakhstan. But one of the most exciting mining prospects he's seen is right here in the keystone province.

The bird's eye view of Manitoba is a patchwork quilt of fertile farmers' fields, yet that same wealth of resources exists under the ground as well according to Dave. He says the province has the potential "for everything" from tapping into soft

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rock fossil fuels to hard rock extraction of copper, gold, nickel, cesium, and other exotic-sounding minerals vital for a variety of applications in electronics, manufacturing, and much more.

Last year, certain efforts by the province were undertaken to hopefully kick-start a potential potash development which Dave says would signal "a massive change for the southwest part of the province". Although markets are presently suppressed, they always rebound, Dave notes.

Helping his home province maximize its economic potential is one side of the coin when it comes to the appeal Manitoba holds for Dave. The flipside is that he's simply a prairie boy at heart who loves to garden, and an ardent supporter of local sports franchises like the Bombers and the Jets.

Though presently nursing an injured Achilles tendon, Dave says one of his favourite pastimes is running. He also enjoys spending time with his kids, Carter and Holly; wife Darcy, a child psychologist working in private practice; their two pooches Mocha and Finnegan; Hunter the cat; and Carter's prized crested gecko, Osshie.

Chris Trenholm, EIT

Competitive, inquisitive, committed to protecting the public

Chris Trenholm's mechanical engineering skills were partly forged in the crucible of competition. As success in a string of design challenges took the then Faculty of Engineering student from the University of Manitoba campus, to regionals, and then to the national stage, Chris also fondly recalls how the experience cast his fellow designer-classmates-teammates into something much more.

"Those competitions were a great way to network and get together with other engineering students," says Chris, who is presently an Engineer in Training (EIT) at Manitoba Hydro. "I'm still in communication with everyone from our team; we formed a lifelong friendship out of that experience."

That camaraderie, though not unique to engineering, seems nevertheless to be a hallmark of the profession here in Manitoba, and a value Chris says he's seen through his interactions with Engineers Geoscientists Manitoba and its membership. According to Chris, Engineers Geoscientists Manitoba staff and executive have regularly helped him with everything from offering advice on papers he's submitted towards earning his P.Eng. designation, to queries more general in nature.

As the Member-in-Training (MIT) Representative on Council, Chris says he looks forward to giving back to his profession. He's also ready to pay the goodwill forward to today's Engineering students by acting as liaison between Council and the University of Manitoba Engineering Society.

"It's fun to see what's going on at the U of M and meet students who will be EITs soon," says Chris. "I know when I was in their place, I had a lot of questions." That inquisitive nature is something Chris says he's had since childhood.

From the time he was little, he remembers being apprentice to his dad – a lawyer by profession, a handyman at heart – on sundry projects around their home in Winnipeg's Linden Woods neighbourhood. "Growing up, I was curious, I was always taking things apart," recalls Chris, who describes himself as a "big" Lego guy.

Joining Manitoba Hydro in 2012 as a summer student, and 2014 as an EIT, Chris found an organization tailored to his restless curiosity. Today, he works in the mechanical engineering department inspecting and safeguarding the large cranes, hoists and auxiliary equipment, resident at Hydro's generating stations dotting the province, that are deployed in times of equipment repair or replacement. It's a shift away from his design-heavy student days, but Chris says he likes the challenge of keeping the equipment up-to-date, functional, and the workers around it, safe. "At Hydro, safety is always the number one concern," says Chris.

With about a year still to go before he's eligible to earn his P.Eng. designation, Chris admits he's already imagining what his career might look like in five or so years. Staying in Manitoba is key from a personal standpoint, as Chris wants to continue the family tradition of spending summers at the cottage in Falcon Lake, something the 26-year-old has been doing since he was a kid.

Professionally speaking, Chris hopes to continue on his career path at Hydro, hopefully in a supervisory role and then, perhaps, shifting gears into an area like finance to indulge his interest in business.

To ensure his professional reach doesn't exceed his grasp, Chris is already taking steps to position himself for that future: he started his MBA in January.

As for his term on Council, he says the responsibilities of representing the public and protecting them make it "the perfect all around volunteer opportunity".


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Government Relations - Issue Statement

C. S. Sarna, Director of Government Relations

Engineers Geoscientists Manitoba understands that the engineering and geoscience professions, are essential for developing design solutions, critical infrastructure, and life-essential systems for the general public. Many of the projects managed and executed within these professions are the largest budget expenditures made by government on behalf of the general public and represent significant technological, social, and economic developments.

The relationship between the engineering and geoscience professions and government takes many forms. These include, but are not limited to:

- As engineering service providers with the government as client
- As developers of government regulations such as the *Engineering and Geoscientific Professions Act*
- As expert witnesses able to serve on various government committees.

Since July 1, 2014 the Government Relations Department of the Association has accomplished the initial steps for the Association to become trusted advisors to government officials. This trust will increase as our members highlight the availability of local expertise and the opportunities for innovations that can occur when these bodies collaborate.

The Association wants to be an active, recognized, easily understood, and trusted voice in the community on matters related to engineering and geoscience, and fulfill our mandate to regulate the professions and protect the public interest. Our priority is to develop better relations with all levels of government: provincial, municipal, and federal.

The general public will benefit from a stronger relationship between government and these professions. They can be confident that the government will then be using the Association's expertise in the decision making processes that affect their world.

The Association will conduct its government relations in a non-partisan manner and should strive to be seen as consistently regulating the professions and protecting the public interest. Clear objectives and goals of the Association must guide its activities to improve government relations.

Strategic Plan Flow

The Strategic Plan flow would adhere to the following plan:

- Ongoing: weekly updates, creation of action plans and changes based upon new information
- Ongoing: monthly review of the Strategic Plan, action plans, and overall progress
- Monthly: stakeholder analysis of Government Relations Strategic Plan
- Monthly: report progress made in each area of the Government Relations Strategic Plan document, place a report on the agenda for Council meetings under information items
- Quarterly: send e-news to the membership with updates on the Government Relations Department and the Strategic Plan
- Quarterly: Keystone Professional Government Relations updates
- Quarterly: Association town hall government relations gatherings to hear from the stakeholders, give updates and receive ideas to place into the strategic plan
- September Council meeting: place the Government Relations Strategic Plan on the main agenda for review and possible discussion
- October Ingenium: hold Government Relations Strategic Plan panel
- December Council Meeting: place on agenda the revised Government Relations Strategic Plan as information item
- January: annual Policy Governance Ends report and approval of Government Relations Strategic Plan
- March: Budget consultation relating to the strategic plan items for approval from executive council in May and implementation in the new fiscal year July 1st
- Spring: *The Keystone Professional* magazine will include a description of the progress made in the Government Relations Department based upon the ends and Strategic Plan

Stakeholder Analysis

An annual brainstorming session will be held by the Government Relations department to ensure the involvement of all stakeholders in the development of Strategic Plan. These stakeholders include:

- Ownership Linkage Committee
- Association Council Members
- Association Executive Committee
- Association Members
- Association management committee and staff
- Associations: MAA, ACEC, CTTAM and others
- Engineering and Geoscience Associations from across Canada
- Government Officials from all levels of government
- Government Department Heads – Deputy Ministers
- University of Manitoba Faculty of Engineering Department
- Other Stakeholders

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"Since July 1, 2014 the Government Relations Department of the Association has accomplished the initial steps for the Association to becoming trusted advisors to government officials. This trust will increase as our members highlight the availability of local expertise and the opportunities for innovations that can occur when these bodies collaborate."

The meetings with the stakeholders will be documented. All notes from the meetings will be accessible to Council for review upon request.

Ideas and recommendations from the participants and stakeholders will be reported so their feasibility can be discussed and the possibility of implementation can be determined.

Strategic Plan Items

The following are the strategic plan items that will be executed over 2016-2017:

1. Proposed Act Amendment Process
2. Government Relations Advisory Task Group
3. ACEC Government Relations Coordination
4. Engineers Canada Bridging Government and Engineers Committee
5. Government Officials – Outreach Program
6. Engineers Canada – Public Affairs Committee
7. Government Officials – Association Events
8. Association Collaboration across Canada in Government Relations
9. University of Manitoba – Funding

If you have any questions, feedback or comments, please do not hesitate to contact Soffia Baragar by email *sbaragar@apegm.mb.ca* or by telephone at 204-474-2736 ext. 232.

THE ACT CHANGES ARE COMING

For the first time in 10 years, amendments have been made to *The Engineering and Geoscientific Professions Act (the Act)*. Engineers Geoscientists Manitoba has been in the process of amending the Act since June 2014, when a joint meeting with the Minister of Labour and Immigration and the Manitoba Association of Architects (MAA) sparked interest in making changes. Since then, a significant amount of work, time, and resources have been allocated to changing the Act. The new Act received Royal Assent on November 5, 2015, and is now officially law for the public and all engineers and geoscientists licensed to practice in Manitoba.

Brief History

At the meeting on March 15, 2012, Engineers Geoscientists Manitoba Council passed a motion to create a task group to study the topic of limited licensure for non-engineers. *The Engineering and Geoscientific Professions Act* of Manitoba did not have a limited license category while such a category exists in many other provinces. Adam Pawlikewich, P.Eng., FEC, chaired the Licensee Task Group comprised of professional engineers and certified engineering technologist (C.E.T.) volunteers. The task group provided a licensee membership category proposal to Council.

A limited license category was necessary for Manitoba to be compliant with the province's Agreement on Internal Trade (AIT).

Licensed workers from other Canadian jurisdictions are allowed to practice their occupations in Manitoba in accordance with Chapter 7 (Labour Mobility) of the AIT. In particular, it requires Manitoba regulators to comply with Chapter 7 when workers who are certified for an occupation in another jurisdiction apply to obtain Manitoba certification for that occupation. This law affects the regulated professions in two ways: (i) it ensures that the measures used by regulatory bodies to certify individuals to work in occupations comply with the obligations of Chapter 7 of the AIT and (ii) any By-Law, directive, guideline, program, policy or administrative practice or procedure used by a regulator must be compliant with the *Labour Mobility Act*.

As a result, it was necessary for the Association to ask the government to amend the Act to include the membership category of engineering licensee or geoscience licensee. Other provinces, such as British Columbia, Alberta, Saskatchewan, and Ontario, currently have licensee categories in their legislation. The new membership category makes Manitoba's Act compliant with the Labour Mobility Act (and Chapter 7 of the AIT).

Amendments

In addition to the creation of the licensee category, some administration changes to the Act were included. For example, Section 24(2) "Penalty for Non-payment of Dues" has been amended to reflect online payment capabilities and timing.

The five (5) parts to the Act amendment include:

A. Limited licensee category
B. ProDev administration
C. Online voting for elections and By-Law ratification
D. Charitable donations
E. Administrative clean-ups

One of the Act changes allows for the Member-in-Training Representative, now referred to as the "Engineering Intern Councillor", to vote as a Council Member. Please see the following link for additional information on the extent of the Act changes: *http://web2.gov.mb.ca/bills/40-4/b021e.php*.

The Timeline

- October 2013 – Cabinet Shuffle
- November 2013 – Letter to new Minister
- February 2014 – Joint letter with MAA
- June 2014 – Meeting with Minister Braun
- July 2014 – Meeting with Deputy Minister Parr
- August 2014 – Act amendment proposal
- January 2015 – Legislative review
- Winter 2015 – Three Association public open house sessions
- Fall Session – 1st, 2nd Readings
- September 9, 2015 – Standing Committee
- October 21, 2015 – 3rd Reading
- November 5, 2015 – Royal Assent

Stakeholder Group Input

To ensure cohesiveness in the Act change, the following other Associations were engaged for the stakeholder analysis:

- Manitoba Association of Architects
- Certified Technicians and Technologists Association of Manitoba
- Association of Manitoba Land Surveyors
- Manitoba Institute of Agrologists
- Manitoba Professional Planners Institute (city planners)
- Professional Interior Designers Institute of Manitoba
- Certified Medical Lab Technologists of Manitoba
- Engineering and Geoscience Associations across Canada

Full Support

During the stakeholder consultation phase of the Act amendment process, the Association reached out to all Parties represented at the Legislature. Through meetings and discussions, full support from government and opposition was achieved. In particular, a big "thank you" goes out to Minister Erna Braun, M.L.A. Dennis Smook, and M.L.A. Jon Gerrard for their genuine interest, questions and advice, culminating in their statements of support in the House during the three readings of Bill 21.

Next Steps

Implementing the changes outlined in the new Act has been a top priority for Engineers Geoscientists Manitoba.

Provisions of the new Act with respect to ProDev Administration have already been implemented. Members who are non-compliant after January 13, 2016, were sent a letter requesting that they update their records, and members who were still non-compliant on January 25, 2016, were sent a final notice giving 30 days to comply, or they may be suspended temporarily until they showed compliance with ProDev. Any members who were still non-compliant by February 29, 2016, were suspended temporarily until they showed compliance with ProDev.

Engineers Geoscientists Manitoba Council moved to establish a Charitable Giving Policy of 2% of revenue annually to non-engineering or non-geoscience charities which is currently in effect. The policy supports giving to major charities such as CancerCare Manitoba, and to small charities such as Girl Guides of Canada. The chosen charities, and amounts donated, will be listed in the Association's yearly reports.

Honourable Erna Braun, Minister of Labour and Immigration, M.L.A. for Rossmere

Mr. Dennis Smook, M.L.A. for La Verendrye

Dr. Jon Gerrard, M.L.A. for River Heights

Changes to accommodate the addition of a limited license category continue to take place as the Association revises its manual of admissions, and adjusts its policies, and processes, to suit.

Engineers Geoscientists Manitoba aims to have all changes outlined in the new Act implemented and in effect by January, 2017.

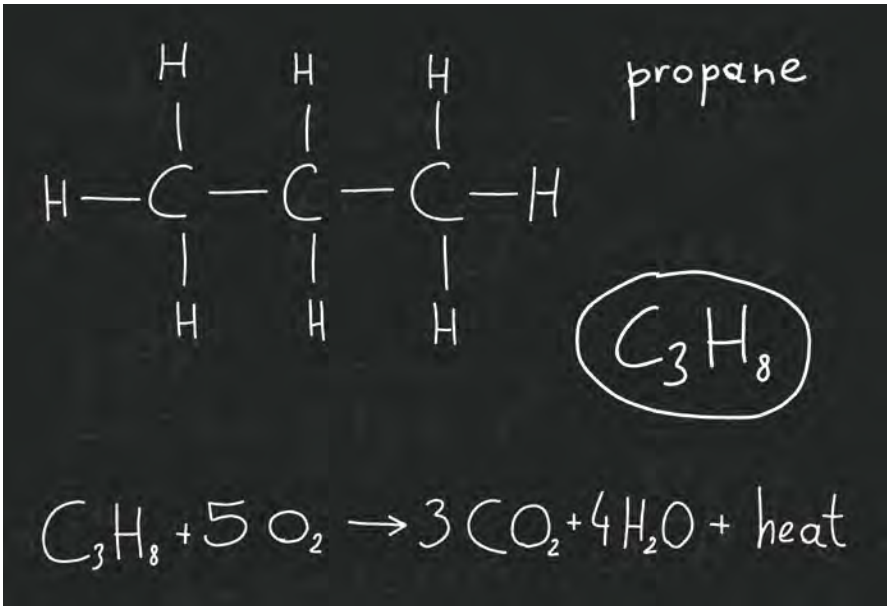
If you have any questions regarding the new Act, please do not hesitate to contact the Association's Administrative Assistant for Government Relations, Soffia Baragar, at *sbaragar@apegm.mb.ca.*

Geology and Society – Critical Minerals 1: Hydrocarbons

R. Reichelt, P.Geo., FGC

In the Winter 2015 issue of *The Keystone Professional*, Dr. Ganpat Lodha, P.Geo, FGC, outlined the contributions of geoscientists to society. However, have you ever thought how dependent your life is upon critical minerals? In this article, I will quickly examine one group of critical minerals, hydrocarbons (petroleum, coal and natural gas) and I plan to examine more in the future.

Chances are you used at least two of these minerals today, possibly all three. These are the most critical minerals in our industrial society because they supply most of the energy we use for transportation, heating, and industrial processes. Without the energy supplied by hydrocarbons, we would be reliant on human -and animal-power as well as some contributions from wind and water power. Think of life in the year 1700.



According to the World Bank, per capita energy consumption in Canada in 2013 was the equivalent of 7,149 kilograms of oil per year1 and that 72.3% of Canadian energy consumption is from fossil fuels[2]. This suggests an annual per capita consumption of fossil fuels in Canada of 5,169 kilograms. If that is not enough to consider, note that every day we use countless products made from petroleum. We give these the general term "plastics." As an exercise, try counting the number of times you use plastics in a day. Include items such as the polyester in your clothing and the epoxy in your new dental fillings. According to Innovation, Science and Economic Development Canada, close to $2 billion worth of plastics were shipped in Canada during 2012-13.

Want some more? Consider this: how would we feed the seven billion or more people on the planet without hydrocarbons to fuel the agricultural equipment, and more importantly, to make the ammonium nitrate fertilizer? Without ammonium nitrate fertilizer (made from natural gas in the Haber–Bosch nitrogen fixation process), we would have trouble feeding more than the 1.5 billion people that lived on the earth in 1900, before Fritz Haber's invention.

Just something to think about.

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1. World Bank, 2014, Energy use (kg of oil equivalent per capita) *http://data.worldbank.org/indicator/EG.USE.PCAP.KG.OE/countries*
2. World Bank, 2014, Fossil fuel energy consumption (% of total), *http://data.worldbank.org/indicator/EG.USE.COMM.FO.ZS/countries*
3. Innovation, Science and Economic Development Canada, 2012, NAICS 3261 Plastic Products Industry (Total), *http://www.ic.gc.ca/eic/site/plastics-plastiques.nsf/eng/pl00312.html*

Mobile Membership: The Engineers Geoscientists App

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ENGINEERS GEOSCIENTISTS MANITOBA

APEGA's Successful Appeal of Alberta Human Rights Commission Tribunal Decision Protects Public

Edmonton – In her decision issued January 26, 2016, Madam Justice Ross upheld The Association of Professional Engineers and Geoscientists of Alberta's (APEGA) appeal and reversed the decision of the Alberta Human Rights Commission (AHRC) tribunal. Justice Ross also dismissed the cross-appeal by Ladislav Mihaly.

Mihaly had complained to the AHRC alleging that by being asked to write confirmatory examinations by the APEGA Board of Examiners, in order to be registered as a professional engineer in Alberta, he was being discriminated against based on his country of origin, the Slovak Republic.

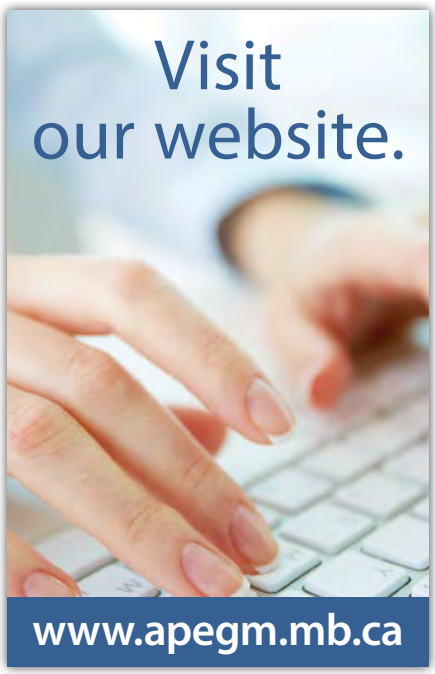
"APEGA firmly believes that the public interest must be the paramount concern of any self-regulating profession," says APEGA CEO Mark Flint, P.Eng. "While we respect the important role of the Alberta Human Rights Commission, the tribunal's decision with regard to Mr. Mihaly, were it to stand, would have had significant negative impacts on the ability of regulators – and not just in engineering but in geoscience, medicine, law, dentistry, and accounting to name but a few – and would have resulted in an unacceptable increase in risk to public safety and well-being."

"The decision contains an extensive analysis of APEGA's registration process for internationally educated engineers," says APEGA Registrar Carol Moen, P.Eng. "I believe the decision confirms the fact that APEGA's application process is fair, equitable, and transparent and that the same rigorous standards should apply to all applicants for licensure as professional engineers."

APEGA The Association of Professional Engineers and Geoscientists of Alberta

Established in 1920, APEGA is responsible for regulating the practices of engineering and geoscience in the province of Alberta.

To review the Court of Queen's Bench Decision, visit *www.apega.ca/assets/PDFs/mihaly-decision.pdf.*



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New Joint Guide Outlines Best Practices for Managing Parental Leave in Engineering and Geoscience Professions

OTTAWA, January 19, 2016. Engineers Canada and Geoscientists Canada have today jointly published a planning resource guide that outlines best practices for employees and employers managing maternity or parental leave in Canada's engineering and geoscience professions.

Managing Transitions: Before, During and After Leave (*www.engineerscanada.ca/sites/default/files/Managing-Transitions-en.pdf* is intended to assist engineers and geoscientists who are considering maternity or parental leave, and is designed to also assist their employers. It provides extensive checklists and outlines steps that individuals, supervisors and companies can take to help smoothly off and on ramp employees taking a leave of absence.

"This guide will be a tremendous resource for new parents and for their employers," said Kim Allen, FEC, P.Eng., the Chief Executive Officer of Engineers Canada. "The guide and its recommendations will go a long way to creating welcoming workplaces in the engineering and geoscience professions with good leave practices that will attract talented employees."

Engineers Canada and Geoscientists Canada are both dedicated to enhancing gender diversity in their respective professions, where women remain under-represented.

Diversity has proven value for innovation, customer relevancy and project management, and employers are therefore looking for ways to improve workplace inclusivity, attract top talent, and ensure their company is on the leading edge of policy and practice. Improving career transitions and managing leaves of absence are crucial for the retention of this skilled and valued talent, and thereby increase workplace diversity.

"Geoscientists Canada is delighted to be jointly publishing this new guide together with our colleagues at Engineers Canada," said Oliver Bonham, P.Geo, FGC, the Chief Executive Officer of Geoscientists Canada. "Experience and research has shown that without forethought, rejoining an organization can be frustrating, especially when expectations are not managed. The solution is to actively manage the transition and this guide outlines the steps to do so, ensuring that employees and employers know what to expect; that leaves of absence do not disrupt career progression or productivity; and that business continuity remains."

Engineers Canada and Geoscientists Canada thank the Association of Professional Engineers and Geoscientists Alberta (APEGA), and acknowledge the groundbreaking work done by the women and men of the Women in APEGA group. That group created the foundational document, *Managing Transitions: Before, During and After Leave*, upon which this national guide is based.

Engineers Canada is the national organization of the 12 engineering regulators that license the country's 280,000 members of the profession. Together, we work to advance the profession in the public interest. *www.engineerscanada.ca*

"The guide and its recommendations will go a long way to creating welcoming workplaces in the engineering and geoscience professions with good leave practices that will attract talented employees."

Geoscientists Canada is the national organization of the provincial and territorial licensing bodies that regulate the practice of geosciences in Canada. The geoscience profession, which encompasses many specialized practice disciplines, currently has over 13,000 licensed professionals and Geoscientists-in-Training across Canada. *www.geoscientistscanada.ca*

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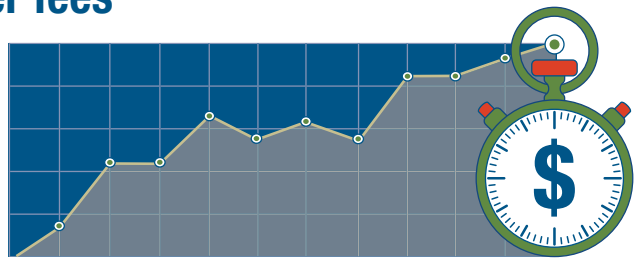

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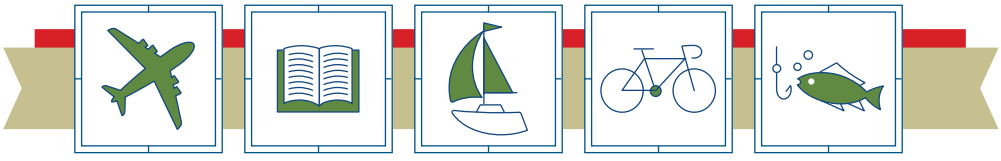

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A. Ardeshiri-Cham
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D.B. Barton
J.R. Bartz
M. Beaupre
M.A. Beaupre
A.J. Bennett
T.J. Bennett
M.E. Billowits
B. Blackburn
A.B. Blatchford
M.J.A. Bolster
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K.E. Bredeson
L.A. Brown
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M. Casavant
B. Cestra
R. Chaudhari
R. Chune
D.W. Clough
E. Cloutier
I.D.P. Conte
E.K. Cooke
K.A. Cormack
H.J. Cortens
I. Coulibaly
G.E. Crawford
M.R. Cunha Cordeiro
S.A. Davidow
M.R. Davoudi
L.M. Delanoy
F.E. Denis
M.L. Denis
K.G. deRee
K.L. Dewar
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M.J.H. Duff
S.J. Dysievick
M.S. El-Refaei
V.V. Elimban
A.P. Evans
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D. Ferrari
P. Frenkel
A.J. Fritz
K.C. Fritz
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D.L.F. Gaden
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M.D. Globush
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S. Mukherjee
Y. Mykytyuk
C.D. Neill
D.J. Neufeld
A. Nezvesciuc
P.D. Nguyen
M.F. Nixon
B.J. Nordell
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Y. Wang
M.A. Webert
A. Weinberger
T.M. Werbovetski
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R.E. Almiron Bonnin
O.S. Arowosegbe
M.E.G. Bailes
J.L. Bartel
N.F. Basta
V.S. Beach
R.A. Burbano
T.L.D. Cao
W.W. Chan
H.V. Dang
M.G. El-Gendy
M.M. EL-Sayed
S.J. Entz
J.D. Ethier
M.T. Faisal
S.D. Findlay
D. Francy
B.G. Friesen
M.L. Hawker
D.M. Heinrichs
D.J. Kasunic
R. Khadilkar
M.S. Kleiber
J.A. Lloyd
M.L.B. Manarin
S.M. McKenzie
R.R.R. Meakin
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A.M.K. Novecio
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N.A. Oubeid
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S.L. Parashin
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S.E.M. Rofaeil
M. Sadrnourmohamadi
O.V. Sampson
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A.A. Shadrack
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Q. Song
P.R.R. Soriano
Z. Sterling
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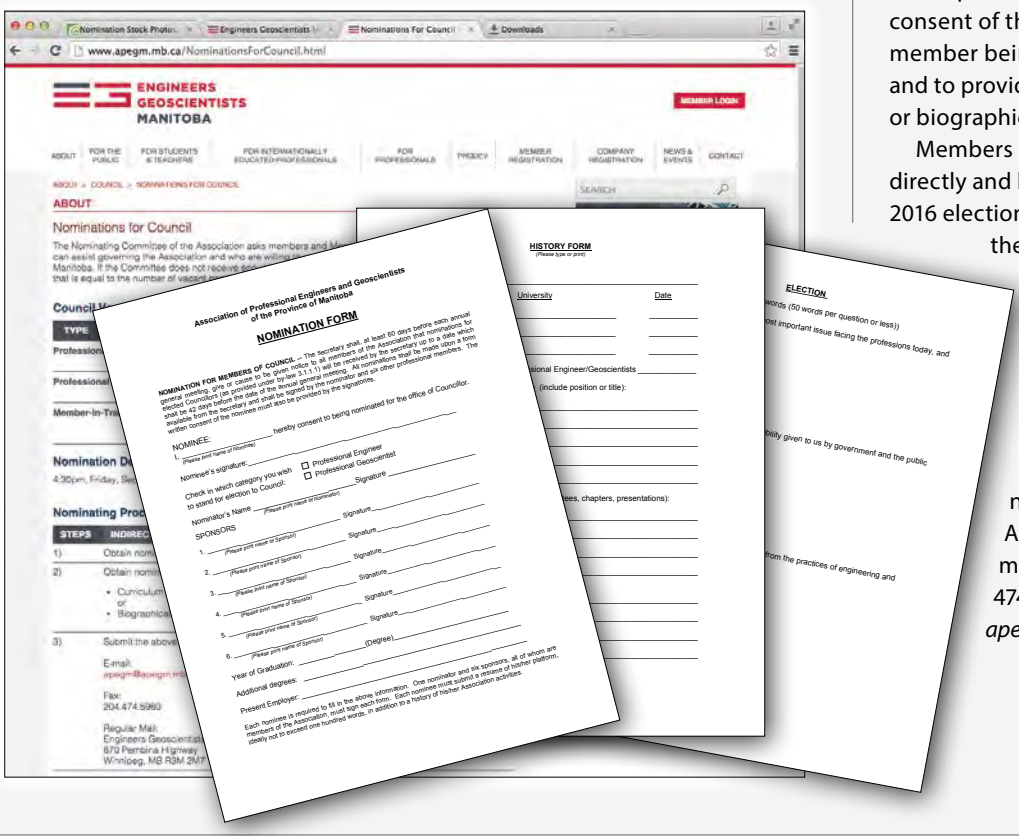
Nominations for Election to the Engineers Geoscientists Manitoba Council

The Nominating Committee of Engineers Geoscientists Manitoba requests recommendations from members and members-in-training, for nominees who they consider to be qualified to participate in the governance of the Association, and who are willing to so serve the engineering and geoscience professions in Manitoba. There will be four professional engineer positions and one professional geoscientist position, to be filled as of October 2016.

The Committee will consider recommendations for all positions received by the secretary up to the close of business on Friday, September 16, 2016.



In the event insufficient recommendations are received, the Committee may exercise its prerogative to put forward a slate of candidates for election that is equal to the number of positions to be filled. Persons submitting a recommendation are required to obtain the consent of the professional member being recommended and to provide a curriculum vitae or biographical sketch.

Members can also be nominated directly and be on the ballot for the 2016 election by the completion of the prescribed nomination form. Nomination forms may be downloaded from the Association website or may be obtained from the Association office.

Please send your nominees to the Association office by mail, by fax to (204) 474-5960, or by email to *apegm@apegm.mb.ca.*

Association Launches New Award in Honour of Judith Weiszmann

The Association is proud to announce a new award, which will be included in the 2016 Engineers Geoscientists Manitoba Awards to be presented at the annual Gala Dinner event in October.

The Judith Weiszmann Women in Engineering Champion Award, named after the first female engineer to be registered in the Province of Manitoba, is intended to recognize female engineers who through engineering and career achievements have demonstrated the qualities that enable Judith to be recognized as an outstanding engineer, role model, and influencer of the profession for the advancement and support of women in engineering.

For more information and criteria for this new award please visit: *www.apegm.mb.ca/pdf/Awards/WomenInEngineeringAwardCriteria.pdf*

Member News

Jeannette Montufar, P.Eng. Ph.D., PTOE, FITE is a member of Engineers Geoscientists Manitoba and is running for MLA in the upcoming provincial election.

Jeannette is a Professor in Civil Engineering at the University of Manitoba and founding partner of MORR Transportation Consulting Ltd. She is a graduate of the University of Manitoba, where she obtained a Bachelor of Science in Civil Engineering in 1994. She then pursued a Master's and a Ph.D. in transportation engineering also at the University of Manitoba, where she later became a professor.

Wanted: Prose From Fellow Pros

The Keystone Professional Committee invites articles for possible inclusion in upcoming issues of the magazine. If you would like to submit an article please send it to the attention of the Keystone Professional Committee at *apegm@apegm.mb.ca.*

Correction

In the Winter 2015 issue we published that the Committee for Increasing the Participation of Women in Engineering along with The Women in Consulting Engineering held a half day workshop titled "Presence: The 'You' Who Enters the Room". Please note that this workshop was facilitated by Bridge Dynamics.

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Congratulations to CIMA+ in being the only consulting engineering firm to have reached the Platinum Level of the 2016 Best Employers in Canada, a category that is exclusively reserved for organizations that achieved the best results in the Aon Hewitt survey. The 2016 Aon Best Employers in Canada were selected based on their performance relative to data collected from over 625,000 employees working at more than 600 organizations of all sizes in Canada. This is the fourth time that CIMA+ has been recognized among the Best Employers in Canada.

Obligations to Perform Site Reviews

A recurring theme that arises in my role with professional standards is with respect to the building industry and site reviews by engineers. One question pertains to whether or not there is an obligation to perform a site review. The other speaks to the reliance of other people to perform the physical review itself.

When a member seals a design for a building, are they obligated to perform the site review for that project?

The Investigation Committee (IC) has considered this question before, particularly with respect to a complaint that was made against one of our members. As with many questions of conduct, the answer is not a straightforward "yes" or "no" but one that depends on two factors. This answer is flushed out by first considering the reason why someone might complain that a member has acted inappropriately.

One could argue that when an engineer authenticates a drawing, they should understand the process involved in bringing that design to fruition. In particular, a design engineer should know that in order for a building owner to acquire an occupancy permit, they must submit to the Authority Having Jurisdiction (AHJ - e.g., the City of Winnipeg) a letter from the engineer of record that confirms that the construction was conducted in general compliance with the design. Without these letters, the AHJ will not allow a building to be permanently occupied.

Although it is true that members should understand the long-term requirement for certification letters, there are instances where a particular engineer is not expected to assume that role. A prime example is a situation where a member has been engaged to only provide a "conceptual" drawing that can be used for budget pricing. Sometimes, an owner will commission a design and cancel the project if the costs are too high. The IC has confirmed at least one case where a member's "For Budget" design was submitted to the AHJ for a building permit without the member being aware.

What the IC has determined, is that if a member is providing a design, and is not intending to perform site reviews, they should ensure that this is clear to all interested parties. Members in this situation should ensure that their contract with the client clearly indicates that the fee proposal does not include site review services. In addition, any drawings issued by the member should include a note that clearly indicates to any recipient of the drawing that the design engineer was not engaged to perform site reviews for the work.

Who can perform a site review on behalf of a professional member?

This question is easier to answer, but surprisingly has come up several times through the IC's review of complaints. Engineers Geoscientists Manitoba's standards, particularly the Act and Code of Ethics, clearly indicate that engineering and geoscience work can be performed by anyone who is "under the direct supervision" of a professional member. This allowance extends to include on-site work.

The term "direct supervision" is not interpreted in the strictest sense that would require a member to physically watch the engineering or geoscience work for which they will take responsibility. However, ethical standards do restrict the kind of person upon whose work a member can rely. Returning to the building industry as an example, AHJs require a letter certifying that the construction was performed in general conformance with the design. The reason that this letter must come from a professional member is that the professional acts independent of the building owner's interests and protects the public that may be affected by that building.

It is for this reason that members should not rely on site reviews performed by the building owner or the contractor. Both of these parties have a vested interest in overlooking deficiencies. A building owner may be looking to expedite their occupancy date. Additionally, either party may be seeking to reduce the costs associated with remedial work.

For these reasons, members should rely only on site reviews conducted by individuals who are independent of the work being reviewed. A person that is employed by the member taking responsibility is ideal. However, regardless of the direct relationship between the member and the person on whom they are relying, the member should ensure that they have given appropriate direction and instruction to that person prior to the site review. In addition, they should be satisfied that the person is suitably qualified to perform the site review on their behalf.

As always, I appreciate comments and discussion about standards issues. If you'd like to talk about the above topic or any other area of concern, please do not hesitate to contact me at: *mgregoire@apegm.mb.ca*.

The Keystone Professional wishes to thank the following companies and organizations for their advertising support. Please think of them when you require a product or service. We have tried to make it easier for you to contact these suppliers by including their telephone numbers and websites. You can also go to the electronic version at *apegm.mb.ca* and access direct links to any of these companies.

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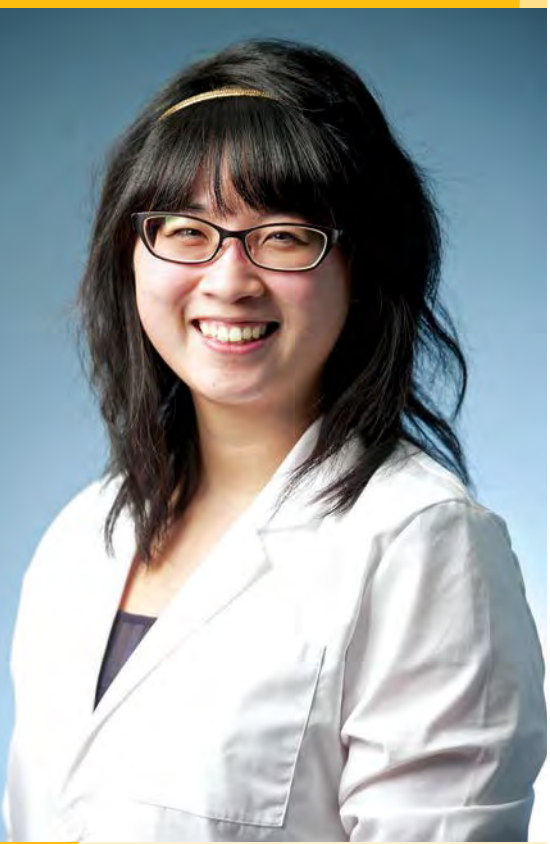

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Co-op Students Hiring Incentive: for placement of co-op education students into employment in Manitoba, lasting ten weeks or more, and linked to their studies. The credit has recently increased to 15% (from 10%) of net wages and salaries, up to a lifetime maximum of $5,000 per student. The credit is earned when the student completes a placement.

Co-op Graduates Hiring Incentive: for hiring recent co-op education graduates into permanent employment in Manitoba, linked to their area of study. The credit has increased to 15% (from 5%) of net wages and salaries, earned on completion of each of the first two consecutive years of full-time employment, to a maximum credit per year of $2,500 per graduate. There is no limit on the number of co-op graduates for which an employer may be credited.

For full details, visit: http://www.edu.gov.mb.ca/ald/tax_credit/index.html

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For more information and assistance with regards to your eligibility, applications, and forms required, our administrative staff in the Engineering Co-op/IIP office would be pleased to assist you in taking advantage of these financial incentives.

umanitoba.ca/student/coop

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