The official publication of the Association of Professional Engineers and Geoscientists of the Province of Manitoba

THE KEYSTONE PROFESSIONAL

WINTER 2012

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Recapping Ingenium

Advocating in the Public Interest

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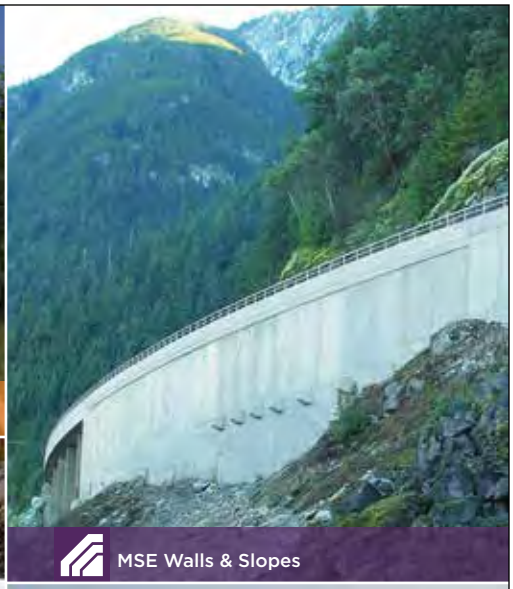

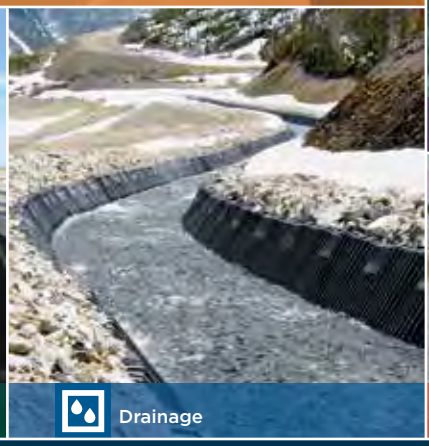

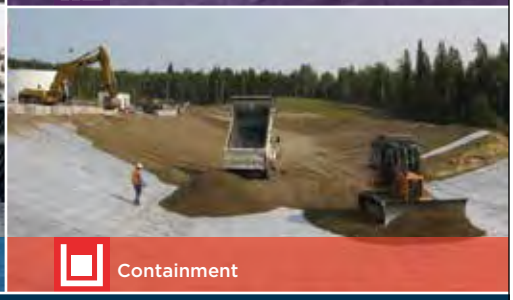

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APEGM

WINTER 2012

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Dawn Nedohin-Macek

My Life's Work Makes Life Work Better

I am honoured to be the 94th President of the Association of Professional Engineers and Geoscientist of Manitoba. I am looking forward to connecting with the larger engineering and geoscience communities in Canada by participating in Engineers Canada and Geoscientists Canada board meetings, meeting the fellow presidents and councils at other associations' Annual General Meetings and working with the Association staff on key Manitoba issues. I am also fortunate to be able to work with the faculty at the University of Manitoba, with a couple of speaking engagements already planned and more to come.

Promoting engineering and geosciences is easy; telling someone about the spaghetti bridge competition during National Engineering Week, mentioning the next mining opportunity in Northern Manitoba, or talking about how engineers worked together to keep the lights on during the last big winter storm is a sure way to get the word out about what we do as engineers and geoscientists.

But what about the issues concerning our profession? How often do we mention that it is difficult to know when we need to step in when the issue of advocacy is raised, or that enrollment in engineering (both male and female) has been declining? I encourage you to keep these and other issues in mind when you are talking to others inside and outside the profession.

Council continues to work on the question of advocacy, with the Advocacy Task Force committee and participation from membership to help guide us in creating the advocacy framework. I encourage you to review and participate on this very important question. Our research into advocacy is being looked at by other associations as they grapple with this subject as more engineering concerns are raised in the news - from the construction scandal in Montreal to hydraulic fracturing (fracking) in on the east coast.

Engineers Canada is working on the Canadian Framework for Licensure, which will develop foundational documents to help engineering regulators across Canada improve their legislative framework to enhance equity, consistency, fairness and timeliness of services. These changes will result in enhanced national and international mobility through uniform qualifications recognition, admissions, and discipline and enforcement procedures. Geoscientists Canada released their Framework for Assessment in the Licensing of Professional Geoscientists in Canada in April 2012 and has been promoting it across their constituent associations throughout the year.

I am looking forward to the upcoming year, and am always available to answer questions or talk about what the engineering and geoscientist professions are facing. I can be contacted at *president@apegm.mb.ca.*

"I am looking forward to connecting with the larger engineering and geoscience communities in Canada by participating in Engineers Canada and Geoscientists Canada board meetings, meeting the fellow presidents and councils at other associations' Annual General Meetings and working with the Association staff on key Manitoba issues."

Grant Koropatnick, P.Eng., Executive Director & Registrar

Ingenium: What a **Great Week!**

Did you attend Ingenium

at the end of October? If you did, you will know what a great week it was. If you did not – you missed a good one. The goal of the Ingenium planning team was to make sure that there was something for everyone and that members had a good time. I think this goal was accomplished. Here is a summary of the Ingenium week events:

New Members Luncheon

At the start of the week, new members were welcomed to APEGM with a luncheon, presentation of certificates, photographs and a nice gift bag. The event was held at the St. Boniface Golf & Country Club banquet room, Tuesday, October 23. About 100 new members and guests attended the event where President Adam Pawlikewich, PEng shook hands and presented certificates to new members.

Recognition Reception

This was the first time APEGM has hosted an event for Life Members, Honorary Life Members, Fellowes of Engineers Canada and Past Presidents. Life members are those members who have reached age 70 with at least 30 years of membership. Fellowes of Engineers Canada are those members who have served as president of APEGM or on the board of Engineers Canada as director or president, or have served the profession as a volunteer for a minimum of 10 years. Six APEGM members were honored with a FEC certificate and pin. The event was held at the Fort Garry Hotel Broadway Room, Wednesday, October 24. It was a fun evening with food, wine and conversation shared among colleagues long unseen.

> One more thing: remember our new slogan:
> *"My life's work, makes life work better."*

Professional Development Day

A full day of professional development sessions took place at the Fort Garry Hotel, Thursday, October 25. The day opened with plenary speaker Minister Steve Ashton and continued in a multi-track format including the following topics: Do Engineers Really Rule the World? Engineering Advocacy; Women in Engineering: Moving into the Future; Management, Motivation and Psychology in the Workplace and the ABCs of PENG. Engaging sessions, lunch, coffee breaks, networking with colleagues – Ingenium 2012 was a great success!

AGM Business Meeting

The 2012 annual general meeting took place at the Crystal Ballroom, Fort Garry Hotel, Friday morning, October 26. President Adam Pawlikewich, P.Eng., chaired a good meeting and handed the gavel to 2013 President Dawn Nedohin-Macek, P.Eng.,. Election results for new Councillors were announced and a presentation by the APEGM Advocacy Task Force chair Roger Rempel, P.Eng., was part of the agenda. The meeting was well attended and finished on time.

Awards Dinner and Dance

A great week just kept getting better. The awards dinner was superb. I cannot decide which was the best part. I really liked the dessert as it was both sweet and light. Everything from the wine, beef tenderloin, dessert and coffee was served in grand style. Here is the best part – no boring speeches! Award winners were presented on the big screens with their accomplishments recognized in video. Each recipient got their award from Past President Adam Pawlikewich, P.Eng. and were given a few minutes to acknowledge coworkers, spouses and others. The evening included French Canadian music and dance performed by Ca Claque and finished with some more music and dance moves as Jenifer Scott and 'Groovesound' performed into the night. Thanks to the UMES students and other guests, the dance floor was crowded.

Did you attend all or some of the events at Ingenium in October? There were excellent networking opportunities, no boring speeches, good food and fun, with fabulous entertainment all at a great location. The professional development sessions, business meeting, receptions and awards ceremony were all the best Manitoba has to offer. I hope you enjoyed yourself. If you missed it this year, Ingenium will be back again next year. Plan now to reserve October 21-25, 2013 on your calendar.

One more thing: remember our new slogan: ***"My life's work, makes life work better."***

As always, I appreciate your feedback. Please send me an email on anything you read in the KP magazine: *gkoropatnick@apegm.mb.ca*

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Engineering PHILOSOPHY 101

. . . and the question of competence

M.G.(Ron) Britton, P.Eng.

As of January 1, 2012, it has become compulsory for practising members of APEGM "*. . . to summarize their professional development activities . . .*" on an annual basis. The Continuing Professional Development (CPD) program that facilitates this process has been, and probably continues to be, controversial. Without passing judgement on the specifics of the CPD, I believe it is fair to observe that an increasingly litiginous environment requires that APEGM be able to document member compliance with our legislation. It is also interesting to observe that there is a link between the CPD and our Code of Ethics.

The Engineering and Geoscientific Professions Act requires APEGM Council to "*. . . prepare and publish . . . a code of ethics . . .*". Further, as members of the Association we are required to "*. . . subscribe to and . . . follow this code of ethics . . .*". While the wording may vary, most professional associations in Canada operate under legislation that contains similar requirements.

In Manitoba, our Code of Ethics requires that we *"possess the training, ability and experience necessary to fulfill the requirements of . . . work undertaken"*. As professionals we utilize our "*. . . training, ability and experience . . .*" in order to meet our day-to-day responsibilities. Basically this "*. . . training, ability and experience . . .*" provides the base upon which our individual professional competencies are founded. We graduated from university. We met our EIT requirements. We received, and have retained, our P.Eng. However, as the one-time hit song asked, "is that all there is?'".

> The profession is active in a huge breadth of projects across significantly different areas of technology... We are responsible, as individuals, to work within the constraints of our self defined competence.

Looking back, as we moved through the various stages of our education and training each of us was evaluated by different people, with different objectives. Prior to university entrance, teachers in the school system made judgements that related to our ability to cope with the demands of an engineering program. At university, professors passed judgement on our ability to master the fundamental technical skills engineers are supposed to possess. As EITs, supervising engineers assessed our ability to apply what we learned as students and to accept the responsibility of becoming a P.Eng..

Once we gained P.Eng. status, defining and maintaining our competence became a personal responsibility. Because our individual competence is the fundamental underpinning to our right to practice engineering, it is worth a quick check make certain the meaning of the concept is clear. According to the Oxford University dictionary, competence is *"the quality or extent of being competent"*. So much for adding clarity. But checking further, the noun, competent, has three definitions, "1. *having the necessary skill or knowledge to do something successfully.* 2. *satisfactory or adequate, though not outstanding, . . .*

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3. *having legal authority to deal with a particular matter.*". None of these basic definitions sets the bar very high.

A P.Eng. meets the condition of "*. . . having legal authority . . .* " because of the Engineering and Geoscientific Professions Act. However, it can be argued that this is really an indication of entitlement, not competence. Simply being "*satisfactory or adequate . . .*" should not, and does not, justify any level of recognition. If professional engineers are worthy of the special treatment our Act provides, competence, as defined by the need to have "*. . . the necessary skill or knowledge to do something successfully*", is the characteristic that must distinguish us.

Functionally, each of us must determine both the breadth and depth of our competence. We must know what we know, know what we don't know, and strive to minimize what we don't know we don't know. Our Code of Ethics, after all, charges us with the responsibility to "*. . . regard the physical, economic and environmental well-being of the public as the prime responsibility . . .*". Decisions we make will impact this "*. . . well-being . . .*" and our individual competence affects the quality of our decisions.

The profession is active in a huge breadth of projects across significantly different areas of technology. It is impossible for any one of us to be competent in all aspects. We are responsible, as individuals, to work within the constraints of our self defined competence. Beyond that, APEGM, as an organization, is required to "*promote and increase, by all lawful means and in the public interest, the knowledge, skill and competency of its members and students in all things relating to the professions of engineering and geoscience*".

It can, therefore, be argued that competence is an individual and a collective responsibility under both the Act and the Code of Ethics. In general, this seems to be working. However, on occasions when the Association is required to consider disciplining a member with respect to the competence demonstrated in a particular situation, the charge often states that said member, as an individual, "*. . . knew, or should have known . . .*". While this statement places the responsibility for "knowing" on the individual, the disciplinary action emphasises the need for oversight by the profession. Maybe CPD reporting is a non-threatening way of reminding us of the need for oversight. Maybe CPD does link with our Code of Ethics.

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Thoughts on Design
How We Deal with Loads

M.G.(Ron) Britton, P.Eng

I can recall, as if it was yesterday, sitting in the Physics Theatre at the University of Saskatchewan during my first week as a university student and listening to Dr. Katz state that "*every action has an equal and opposite reaction*." It did not take long to realize that this truism of physics was more complex than it had first seemed.

When I think back to those long ago student days I realize that my undergraduate education was focussed on gaining an understanding of how to deal with the *reaction* portion of Dr. Katz's statement. We started out being asked to find the *reactions* developed in various parts of a defined *system* that was subjected to some given *action*. Later, we were shown how to select an appropriate size/shape/material/process in response to internal *reactions* that resulted from specified external *actions*. As the complexity of the systems increased, we learned to use various analytical techniques to predict performance. Throughout this process, typically, the *actions* (loads) we dealt with were 'given.' While my classes related to Civil Engineering applications, discussions with friends who were studying in other departments suggested that they were experiencing the same learning process, just focussing on different details. At best, from a loads/*action* perspective, we were referred to some code or standard that specified 'safe' loads. While specifics and calculating power have changed over the past 50 years, the fundamental pattern for today's undergraduate programs has not changed that much.

In my opinion, the logic behind the process was, and still is, sound. Students enter engineering programs with a broadly based, but science and math biased, education. They have been conditioned to find 'correct' answers to questions. Four or more years later, as graduates of engineering, they are (we were) expected to know how to apply 'current' science and analysis techniques to deal with the "*. . . equal and opposite reaction*" portion of the truism I pondered during that physics lecture so long ago.

Given the nature of the undergraduate programs, both then and now, it is (was) easy to conclude that, *actions* just happen, but design is (was) focussed on finding some way to provide an adequate *reaction*. New graduates, most of whom will begin their professional careers 'sizing things', will typically bring *reaction* focussed, computer-based, 'design' skills to the job.

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They have succeeded, to this point, by finding 'correct' answers to constrained questions. The most consistent constraint in those questions is/was, design loads. The art of selecting 'real' design loads is still very much an experience-based skill that must be acquired during the EIT phase of an engineer's development.

Upon graduation, I found myself working in the buildings industry. My mentors frequently referred me to the codes and standards I had used at university, but they often supplemented the information in these familiar documents with advice as to what was 'important.' In spite of, or maybe because of, their advice, I continued to view loads (*actions*) as little more than 'given' inputs. When I visited job sites, I had the opportunity to observe real loads in real situations. I began to wonder about the validity of the loads I was using. In particular, snow accumulations on roofs seemed totally disconnected from snow loads, and their distribution, specified in codes and standards. After I shifted from industry into an academic career, this concern evolved into a research interest, with particular application to the field of light-frame structures. Over the years I gained a better personal understanding of structural loads as variable inputs in the design process, but the difficulty of incorporating this variability into undergraduate classes persisted.

The basic *action/reaction* perspective encompasses much more than my structural world. Sooner or later, reality catches up on all designs; bridges collapse, chips overheat, air conditioners malfunction, computers need to be rebooted. In virtually every case, the failure is the result of some *action* that is greater than the design capacity. Frequently older systems, or parts of the older systems, are 'upgraded' without consideration of the original design loads.

Back in my structural world, the 2007 collapse of the I-35 bridge that once spanned the Mississippi River is an excellent example. The original bridge was built about the time I graduated. It was designed using the analysis techniques that I studied as an undergraduate. The loads were specified based on traffic patterns and vehicle capacities that reflected the mid 20th century. Over the years, more lanes were added to accommodate increased traffic volume. Prior to collapse, the bridge was undergoing further expansion. A year later, when the National Transportation Safety Board filed their report, they "... cited a design flaw as the likely cause of the collapse, and asserted that additional weight on the bridge at the time of the collapse contributed to the catastrophic failure."

Undoubtedly our understanding of structural behaviour of steel bridge arches has improved since the 1950s. Analysis of the arches, given the advantage of 50-50 hind site, would without any doubt, find 'design flaws.' What concerns me, however, is the almost casual observation that " ... additional weight on the bridge at the time of the collapse contributed ...". The bridge failed under service loads that far exceeded the original design loads ("given" values taken from the Standards of the 1950s), 'design flaws' notwithstanding.

Is it fair to observe that the relative importance of the analysis and loads in the NTSB report was almost predictable based on the focus in engineering education? Does this approach go beyond the structures world? Do we, as a profession, pay enough attention to both 'variables' in the truism, "*every action has an equal and opposite reaction*", that Dr. Katz offered up so many years ago?

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INVESTING FOR IMPACT IN AFRICA

Africa

This content was taken from the 'What's New' section of the ewb.ca *website, which you can also check out for other articles about EWB's work in Africa.*

KONA Agro-Processing is an entrepreneurial, medium-sized cashew-processing enterprise in Ghana—the sort of operation that has to succeed if the country and region is to develop and succeed on a larger scale. Two years ago, the company was in trouble—there were maintenance issues and a lack of access to capital. In short, their cashew processing and packaging machinery would go down, and it would be months before required spare parts were shipped in and installed. During this time the facility was idle, the employees went without pay, and cashew farmers had one less place to sell their product.

Impact investing is an idea that's really 'exploded' on the development sector. Across the continent, an estimated $100 billion is being invested in African businesses (in various forms) with a dual objective – make a profit and make a difference.

Sounds great, but like so many things, there are problems. A lot of these investments aren't providing the desired return on investment in terms of social change or profit, and that's potentially disastrous – without returns, the money will dry up.

Misplaced Faith in the Almighty Dollar

A lack of access to capital is an admittedly big problem. But providing access to the capital doesn't solve the problem, because there is another, linked issue – the lack of experience and insight required to make the most effective use of it, or to optimize business processes. If a business is bleeding money, you can invest more to ensure it keeps running…but it is not going to last. When the money stops, the bleeding will continue.

EWB looked into how to stop the bleeding.

Financial Investment and Human Investment

You may know that EWB works with African partner businesses and organizations, and also with other NGOs and development organizations. In this instance we partnered up with some great organizations:

- The Lundin Foundation, which has invested in EWB's ventures before. They, "invest in high potential small- and medium-sized businesses across Africa, with a view to generation wealth and employment needed to alleviate poverty on a sustained basis."
- Injaro, an African fund management firm that "makes investments in debt, quasi-equity, and equity in small-and medium-sized enterprises along the agricultural value chain in designated countries of West Africa." Lundin invested in Injaro, and Injaro invested in KONA.
- KONA Agro-Processing – The cashew processing enterprise introduced above.

The result of these partnerships was financial and human investing. Lundin and Injaro brought financial capital, and EWB invested our people, and then invested in KONA's people, to ensure that the business was "investment ready,"

Inside KONA

As mentioned above, KONA had struggled to get its internal operations running efficiently and smoothly enough to generate consistent revenue. One of the major problems they faced was unpredictable down-time of their processing and packaging machinery, due to maintenance failures and technical errors. This would cause backlogs in processing, which would lead to unprocessed cashews sitting in storage for months (instead of being sold), while the people who worked on these tasks went without pay.

Our goal was to find an opportunity to help the company fix its internal systems instead of just fixing the machines, and in doing so, illustrate to the investment community that capital can go a lot further when partnered up with human investments. In short:

- An EWBer embedded within the company as a normal staff person, armed with Injaro's observation that maintenance was an issue.
- After a month or two, he consulted with senior management and facilitated their analysis of the key challenges the company faced.
- This led to the design and gradual implementation of a maintenance management system that would ensure machines were monitored and maintained to eliminate down-time.

Ultimately this system was about empowering company employees to take full responsibility for maintenance issues, eliminating downtime to ensure the company was always running and that Injaro's investment paid off. But there was one more piece to the puzzle – the employees who would be managing the system. And that is where Goodluck comes in.

Unlocking Human Potential: Goodluck!

Goodluck at the KONA cashew facility

Goodluck is a KONA employee and he is bursting with potential. He did not go to university to get an engineering degree, or business school for an MBA, but you would be dazzled by his analytical thinking, natural leadership and zest for learning. In Canada, he would likely have scholarships and a defined 'up the ladder' career path.

The EWB team quickly recognized Goodluck's talent and potential as a process manager and problem solver. So they worked with him often, seeking his advice and asking him to assist with the project. As time went on, it became clear that Goodluck had management potential. He did not just work on the maintenance system, he championed it with enthusiasm, and was instrumental in its success.

He was not a manager, but when it came to transferring responsibility to an internal leader, Goodluck was the obvious choice. So on EWB's recommendation he was promoted to manager, and today can be found guiding the continued operation of the maintenance system.

But that is not the end of EWB's investment in KONA – through our Kumvana program, we are bringing a company executive to Canada, where they will not only attend our annual conference in January, but will also complete intensive training and multiple internships with Canadian companies related to their business. The goal is exposure and insight to further unlock their potential for change within Ghana's economy.

What Happened, and What Happens Next?

In the bigger picture, EWB's goal is to enhance 'impact investing' and find a model that can provide both social and financial ROI. So KONA's success as sort of a case study is important here. As you can see in the table, the impact on KONA is undeniably huge. But one more interesting thing came out of this engagement, that ties directly to EWB's goal of enhancing the way that impact investing happens. EWB is going to Liberia!

EWB is now working with the National Housing Authority, the Soros Foundation and Broadcove, a private equity investor, to create the first large-scale housing development in the country for 30 years. EcoHomes Liberia Limited will build 300 homes over the next five years. As the name implies, the houses will be economical to build (and economical to own) with innovative financing and low running costs.

From searching, to piloting, and now, based on impact, we are multiplying our impact with one of the biggest social investors in the world. Call us crazy, but this is starting to look like systemic change!

EWB Local Chapter News – Imagine Campaign

The Imagine fundraising and information campaign is about our dream for how the world will be in 2036—a dream that is also a realistic target. In essence, we are imagining a world with more opportunities, and more information available about the impact of the choices we make as consumers. Please check out the campaign page here: *https://imagine.ewb.ca/yolandecates.*

The impact of combined financial and human Investment on KONA Agro-Processing in Ghana

BEFORE	AFTER
KONA was plagued by downtime – a broken machine the business literally stopped (as did international shipments, employee work and purchasing from farmers.	KONA has a maintenance system that's led by an internal champion, ensuring machines are kept in working condition.
Employees lost income due to sporadic work.	120+ employees, many of them women, know that the machines will run and they'll get paid.
2010 – 42 metric tons of cashews processed.	**2011** – 360 metric tons of cashews processed. **2012** – (to July) – 600 tons (with half the year to go)
2010 – purchasing from 30 farmers	**2011** – purchasing from 300 farmers **2012** – (to July) – purchasing from 450 farmers *a 10% increase in the number of farmers that KONA is purchasing from is HUGE in a year, especially with an additional 50% increase from 2011 to mid-July.*
Internal leaders (known and unknown) struggling to find success.	Two internal leaders enrolled in EWB's Kumvana program. A new, high-capacity, high-potential manager "unlocked" in a remarkable way.

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APEGM CONFERENCE 2012

By A. Erhardt, P.Eng.

With the introduction of Continuing Professional Development, it only seemed natural for the Association to make a change to the events surrounding the Annual General Meeting. This year marked the inaugural Ingenium Conference. A new members luncheon and Recognition wine and cheese kicked off the week, but the Professional Development Seminars were the focus of the Conference.

The Professional Development seminars were set up with four main tracks available for attendees, which included Professionals along with several student members. Each track consisted of four one-hour sessions spaced throughout the day. Covering a variety of themes that impact Manitoba professionals, the presenters did an outstanding job educating the attendees and were very open and responsive to questions raised throughout each session.

The morning of the seminars began with a welcome from longtime Manitoba MLA Steve Ashton. Launching the day with a theme of infrastructure in Manitoba, Mr. Ashton discussed several of his experiences working with engineers and geoscientists in Manitoba, including some light-hearted interactions shared with his son who is now an engineer.

The '…in our Profession' track focused on several issues that impact Manitoba Professionals in their day-to-day life. Opening with the 'ABC's of P-E-N-G', APEGM Executive Director Grant Koropatnick provided a review of the three key APEGM governing documents, including some history and a Q&A session. This session was followed up by 'A Supervisor's Guide to Registration.' A brief formal presentation was followed up by another Q&A session for questions relating to members-in-training and the registration process. The third session of the track was 'Recent Developments in CPD.' Presented by APEGM's Professional Standards Officer Mike Gregoire, the session highlighted the new online reporting system and the activities undertaken by the Continuing Competency Committee. The final session in this track was an introduction to the newly developed Advocacy Task Force. Councilor Roger Rempel, the chair of the ATF committee, reviewed its mandate while providing insight as to how the committee will continue to evolve.

The '…in your Workplace' track provided attendees training and guidance for issues faced in their day-to-day activities. Starting off with a seminar entitled 'Management, Motivation & Psychology in the Workplace', the seminar focused on techniques and best practices that can be used to attract, motivate and retain employees. The second seminar was 'Moving Human Rights & Equality Forward in the Workplace.' Outlining several potential workplace situations and the impact of human rights law and equality, the goal was to educate attendees as to how their decisions would be reviewed by the courts and tribunals. Following lunch, the tongue-in-cheek entitled 'Do Engineers Rule the World? Should they?' session focused on engineering ethics and professional competency. The track wrapped up with a session focused on skills and techniques that can be used to help make meetings stay on target and be more productive.

The '…in the Province' track focused on a variety of issues and developments within Manitoba. The track began with a seminar highlighting the current and potential future of women along with the benefits of incorporating diversity in the workplace. This was followed up by a session entitled 'Immigration to Manitoba' that discussed the impact of The Fair Registration Practices in Regulated Professions Act and the IEEQ program. The final two sessions focused on the recently completed GLACIER Aerotest facility in Thompson and Winnipeg's Transportation Master Plan, which focuses on six key goals as the city continues to grow and evolve over the next 20 years.

The '…in your Personal Career' track offered assistance with personal skills such as meetings, managing conflict and general communication skills led by members of RGI International, a group specializing in teaching business and technical communication techniques. The track kicked off with a meeting skills session, and was followed up by a session on preventing, containing and resolving conflict. The track finished up with a two-part session on communication skills. Focusing on written communication, the sessions addressed how to write clear, strong and action-getting letters and emails.

Between the second and third sessions of the day, the Director of Planning and Analysis for the Winnipeg Airports Authority Jay Pasemko, led a lunchtime presentation and Q&A session on the new James Armstrong Richardson International Airport terminal. Introducing the concept of an Airport City, Mr. Pasemko outlined the WAA and their role along with several long-term goals they have moving forward.

The Ingenium Conference wrapped up on Friday with the Annual General Meeting along with the Awards Dinner and Dance. The Grand Ballroom at Fort Garry Place was sold out for the black tie masquerade event celebrating the year's award winners with an evening of fine dining, entertainment and camaraderie.

Back: President Dawn Nedohin-Macek, P.Eng.; Executive Director Grant Koropatnick, P.Eng.; Past President Adam Pawlikewich, P.Eng. Front: Awards Committee Chair Ganpat Lodha, P.Geo.; Queen Elizabeth II Diamond Jubilee Medal winners Digvir Jayas, P.Eng., Catherine Stewart, P.Eng., James Blatz, P.Eng.; Rod Bruinooge, MP for Winnipeg South

Master of Ceremonies, Larry Updike, host of Up To Speed on CBC Radio One 89.3 FM

Queen Elizabeth II Diamond Jubilee Medal winners Catherine Stewart, P.Eng., James Blatz, P.Eng. Digvir Jayas, P.Eng., and Rod Bruinooge, MP for Winnipeg South who presented the Medals.

Gala Awards Dinner and Dance By A. Erhardt, P.Eng.

The annual Gala Awards Dinner and Dance marked the conclusion of APEGM's first annual Ingenium Conference. The sold-out black tie masquerade event was held in the Grand Ballroom at Fort Garry Place. With several distinguished guests in attendance, the evening progressed under the guidance of Master of Ceremonies Larry Updike.

This year's awards included a special honour beyond the APEGM award presentations. Marking the 60th anniversary of Queen Elizabeth II's accession to the throne, 60,000 Canadians have been awarded the Queen Elizabeth II Diamond Jubilee Medal in recognition for their outstanding contributions and achievements for Canada. On this night, three Manitoba Professionals were presented with the medal by Pmb @psglmmec, Mck `cp md N_pjg_kclr dmp Ugl lgnce Qmsrf,

Following dinner, Franco-Manitoban artists Ca Claque provided a spirited performance with their traditional and contemporary song and dance, often grabbing guests from the crowd to join in the fun.

As the evening slowly turned into night, Winnipeg's Jenifer Scott and Groovesound took to the stage. Whether sharing a quiet conversation in a corner, taking costumed photographs in the commemorative photo booth or enjoying the steady stream of hits on the dance floor, it was only a matter of time before the night, and the Ingenium conference, came to a close. A fantastic evening that completed an innovative new idea.

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Member-In-Training Award

Scott Hammond, EIT

By APEGM Awards Committee

Scott Hammond graduated from the University of Manitoba in 2009 with a B.Sc. in Mechanical Engineering. Scott became a student member of APEGM in July, 2004 and an Engineer-in-Training (EIT) in July, 2009.

Scott was hired by SMS Engineering Ltd immediately after graduating in May 2009 as a mechanical designer. Over the next three years, he has gained much experience working for the company. Scott has been the project manager for numerous projects after just one year of being hired. He is a LEED accredited professional who has worked on over 225 projects designing building systems for pluming, fire protection and Heating, Ventilating and Air Conditioning systems. Scott approaches all projects with environmental concern and energy efficiency in mind and has submitted several projects for LEED certification.

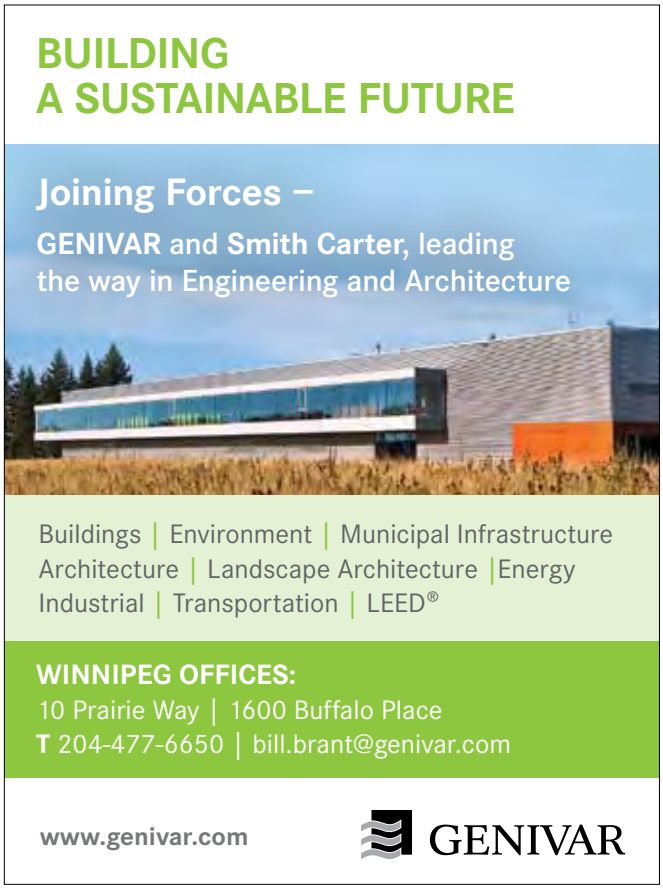
Scott has, with the support of wonderful mentors, co-workers, architects, manufacturer representatives, and owners, completed several projects such as the new Richardson Center Concourse, Investor's Group Stadium, 363 Broadway, various MTS Allstream projects, the James Armstrong Richardson Winnipeg International Airport, the new central energy center at HSC and has worked on many other very important projects within Winnipeg and throughout Manitoba.

Throughout his professional career, Scott has been actively involved in many volunteer activities. In the four months during the summer of 2010, he was part of the Habitat for Humanity team that built houses on Nairn Avenue. Scott is also a student activities chair and young engineers in ASHRAE chair for the American Society of Heating, Refrigerating and Air Conditioning Engineers. He actively encourages young students to become engineers and become familiar with building sciences and HVAC. In addition to this, Scott is also a member of Building Owners and Managers Association of Manitoba, the Association of consulting engineering companies, and the chamber of commerce.

Executive Director Grant Koropatnick, P.Eng.; Awards Committee Chair Ganpat Lodha, P.Geo.; President Dawn Nedohin-Macek, P.Eng.; Award Winner Scott Hammond, EIT; Past President Adam Pawlikewich, P.Eng.

Scott loves to work in his current profession and wants to continue working in Winnipeg and Manitoba and always be part of the engineering community here. He someday wants to be a Principle in the consulting industry in Manitoba.

The Association of Professional Engineers and Geoscientists of Manitoba are pleased to present the Member-in-Training Award for 2012 to Scott Hammond, an exemplary individual, committed to his community and to his profession.



Early Achievement Award

Dawn Nedohin-Macek, P.Eng.

By APEGM Awards Committee

Dawn Nedohin-Macek is a graduate of the University of Manitoba with a Bachelors degree in Computer Engineering. Dawn has been an employee of Manitoba Hydro since graduation taking on ever increasing corporate responsibilities while balancing her career with leadership roles with her technical and professional associations, as well as being involved in promoting women in Engineering to the community. Dawn is currently the Vice-President of APEGM and in the position of Executive Assistant to the Vice-President of Transmission Business Unit with Manitoba Hydro.

Early in her career Dawn was a Process Control Engineer overseeing the analysis, support and development of computer application that support the electrical System Control Centre operations including outage and operational data logging applications. More recently Dawn has been involved in the development of cost estimates and construction schedules for major capital projects such as the Bipole III Converter Station project. Dawn has assisted and participated in an internal leadership program and has assisted in implementing software improvements that enhance workflow and communications on a large scale within Manitoba Hydro, such as the application of Sharepoint 2010. In her current role of Assistant to the Vice-President of Transmission, Dawn assists the Vice-President in assisting the senior management team in developing the business plans, reporting on progress, maintaining a forecast of decision recommendations for the Executive Committee and Board and drafting communications on behalf of the senior management team. Dawn is also involved in a Manitoba Hydro International project with the Transmission Company of Nigeria and will be implementing a Performance Measurement system for them.

Dawn's leadership and commitment in volunteer work serving the profession is impressive. Dawn is currently the Vice-President of APEGM and an elected Councillor since June 2010. Dawn has previously been involved in the Women in Action Committee and Awards Committee for APEGM. Dawn was the chair of the Institute of Electrical and Electronics Engineers (IEEE) Graduates of the Last Decade (GOLD) Committee starting in 2002 and moved into the Chair position of the Winnipeg Section, and was also involved in the IEEE MGA Awards Committee and the IEEE Women in Engineering Committee as a committee member. Dawn is a past Councilor for the Manitoba Hydro Professional Engineers Association (MHPEA).

Executive Director Grant Koropatnick, P.Eng.; Awards Committee Chair Ganpat Lodha, P.Geo.; President and Award winner Dawn Nedohin-Macek, P.Eng.; Past President Adam Pawlikewich, P.Eng.

Dawn has previously been recognized for her early achievements with a number of awards for her excellence in service to the profession including: IEEE Regional Activities Board GOLD Achievement Award 2006, APEGM Member-in-Training 2005, IEEE Section Gold Leadership Award 2003 and the IEEE Regional Activities Board Outstanding GOLD Program Award 2003.

The Association is pleased to present the Early Achievement Award to an exemplary individual - Dawn Nedohin-Macek, P.Eng.

Congratulations to Dawn Nedohin-Macek for winning the 2012 APEGM "Early Achievement" award!

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Champion of Engineering Education Award

Mr. Harry Wall, B.Sc. EE, M.Sc.EE

By APEGM Awards Committee

Harry Wall graduated with a B.Sc. in Electrical Engineering from the University of Manitoba in 1963 and a M.Sc. in Electrical Engineering in 1965. He first registered with APEGM in 1965, but voluntarily withdrew from registration in 1966 to pursue a career in teaching high school math, physics, and calculus. During his time as a teacher, Harry was proud to be an engineer and was a shameless promoter of engineering as a career to his senior math and physics classes. It is important to note that not many teachers or guidance counsellors typically know a lot about engineering as a career, so to have an engineer inside the secondary school system so passionately promoting the profession was a huge benefit and had a significant impact on students. It is also important to note that Harry made sure that the girls in his classes also knew that engineering was a rewarding, challenging, and necessary career that more women needed to pursue.

Harry has been a strong supporter of the profession in his role as a high school academic, encouraging his students to consider the engineering profession as a positive career option. During the years that Harry Wall was the high school physics & math teacher at Mennonite Brethren Collegiate Institute, 113 MBCI graduates came to the Faculty of Engineering, out of a total of 1229 students who came to the University of Manitoba (all faculties combined) during the same time. This means that 9.2% of MBCI graduates who came to the U of M chose to enter Engineering. The Office of Institutional Analysis pointed out that this is higher than most schools: Engineering in general is only 5% of the undergraduate population, so MBCI grads were choosing Engineering at almost twice the expected rate during the time that Harry taught grade 11 & 12 physics and math. One of these students, now a professor at the Faculty and Director of the Internationally Educated Engineering Qualification program, nominated him for this award.

Harry's recruitment efforts were clearly successful on the home-front as well, as his daughter, Carolyn, is also a P.Eng., and is currently serving as an Engineer-in-Residence and Director of the Co-op & Internship Programs at the Faculty of Engineering.

Executive Director Grant Koropatnick, P.Eng.; Awards Committee Chair Ganpat Lodha, P.Geo.; President Dawn Nedohin-Macek, P.Eng.; Award Winner Harry Wall; Past President Adam Pawlikewich, P.Eng.

A passionate educator, at the beginning of his career Harry was briefly an instructor in engineering technology at Red River College in Winnipeg before finding his niche as a high school math and physics teacher at MBCI. During his 40 plus years at the school, Harry taught Physics and Math at the senior high level, spent 12 years as Vice-Principal, six years as Principal and took a two year leave to serve with the Mennonite Central Committee as Assistant Director of Personnel and Voluntary Service.

For his decades of service to the education of future engineering students, and his tireless promotion of the engineering profession, the Faculty of Engineering at the University of Manitoba, together with the Association, is pleased to award the 2012 Champion of Engineering Education Award to Harry Wall.

> "For his decades of service to the education of future engineering students, and his tireless promotion of the engineering profession, the Faculty of Engineering at the University of Manitoba, together with the Association, is pleased to award the 2012 Champion of Engineering Education Award to Mr. Harry Wall."

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Honorary Life Membership Award

Arnold Permut, M.Sc, P.Eng.

By APEGM Awards Committee

Executive Director Grant Koropatnick, P.Eng.; Awards Committee Chair Ganpat Lodha, P.Geo.; President Dawn Nedohin-Macek, P.Eng.; Award Winner Arnold Permut, P.Eng.; Past President Adam Pawlikewich, P.Eng.

Arnold Permut has been registered with the Association since 1977 and has been a continuous member for 36 years. Arnold graduated from University of Manitoba in 1974 with a BSc (Civil Engineering) and MSc (Environmental Engineering) in 1976.

Mr. Permut worked for an engineering consulting firm from 1976-1978. During this period he was involved in several environmental impact studies related to energy projects in the arctic. He has been working with the City of Winnipeg Water and Waste Department since 1978 in a variety of engineering related design and planning positions. He was Manager of the Laboratory Services Division from 1987 to 2004. Part of the responsibilities as Lab Manager included monitoring the safety of Winnipeg's drinking water. During this period he was also responsible for Industrial and Hazardous Waste Control with emphasis on enforcement of Sewer By-Law provisions.

Arnold has been working as Wastewater Systems Planning Engineer with the Water and Waste Engineering Division since 2004. In this capacity he has been involved with projects such as: Upgrading and Expansion of the City's South End Water Pollution Control Centre, the Upgrading and Expansion Master Plan for the North End Water Pollution Control Centre, and a Master Plan for the treatment, handling, and disposal of bio-solids. A common element of these projects is the reduction of phosphorous, and nitrogen release to the environment. He also coordinated the recent revision the City's Sewer By-Law which included extensive public consultation prior to approval. Ongoing activities include the establishment of a long term program to prevent future major process upsets at Winnipeg's wastewater treatment facilities such as occurred in the fall of 2011. He is part of the team to develop a proactive plan for rapid recovery should another process upset occur. Arnold takes great pleasure in the mentoring of young engineers so they can expand their horizons and thereby become integral to the Department's succession planning process.

Arnold has served many years on various APEGM committees. He served on APEGM Council for eight years and was APEGM President in 2004. He has been chair of the Board of APEGM Foundation Inc since 2005. Mr Permut is a 'Fellow of Engineers Canada.' He is also a member of the American Waterworks Association; the Water Environment Federation; and the Western Canada Water and Wastewater Association.

Arnold has been married to Susan (a registered nurse) for the last 37 years. They have a daughter Janie (Obstetrician and Gynaecologist Resident) who is married to Jeff (a Chartered Accountant) and a granddaughter Zoe.

In recognition of his dedicated service to the engineering profession and prolonged voluntary service to APEGM, The Association is pleased to confer Honorary Life Membership on Mr. Arnold Permut.

Certificate of Achievement Award

Rehabilitation of Abandoned Mine Sites in Manitoba

By APEGM Awards Committee

The Abandoned Mine Site initiative estimated the total Manitoba Provincial Government liability for orphaned and abandoned mine sites at over $220 million in 2007. During 2005-2007, 148 abandoned and orphaned mine sites were assessed for the Manitoba Mines Branch by AMEC under Dr. Priscu's leadership. Resulting hazard ratings were: High for 31 sites, Moderate for 53 and Low for 49. The remaining few were either owned by another party or could not be located. The Mines Branch then initiated fast-track rehabilitation. The estimated rehabilitation cost for High-Hazard sites was $30 million.

The High-Hazard EL Mine site, near Lynn Lake, in northern Manitoba, was one of the sites selected for rehabilitation. This combined open-pit and underground Cu-Ni mine operated between 1954 and 1963 and closed in 1964. In 2008, Tetr*ES* (now part of Stantec Consulting Ltd.) with Karen Mathers as Project Manager and sub-contractor AMEC Environment & Infrastructure were contracted by the Mines Branch for the Environmental Site Assessment (ESA), clean up, rehabilitation and Implementation of Closure. The first step was a fast-track comprehensive ESA using environmental science, geoscience, biology, engineering,

geophysics and underwater methods. Completed within one year, it identified the primary and secondary sources of contamination and their interactions. The remnant aboveground and subsurface mine structures were evaluated and described by geophysical, sonar, aquatic and borehole camera technologies.

The ESA also assessed surface hydrology and water chemistry, metal loadings in discharges, subaqueous mineralized wall rock contribution to ground/

surface waters, terrestrial/aquatic habitats, and overburden/rock. Metals and hydrocarbons were the predominant contaminants of concern. Vegetation mapping determined the succession of natural re-growth and identified areas requiring protection during Site Closure. The ESA characterized the overall environmental "footprint" to guide closure planning.

The impacted area was about 8,000 m^2. Remnant mine structures and over 60,000 m^3 of ARD/ML material were removed.

The project completed in Fall 2011 required intricate planning and communications between the consultants, First Nations and Governments. Post-rehabilitation monitoring will continue until 2015. Local contractor participation with aboriginal people trained by Stantec created social and environmental benefits for the community. The design and delivery of this project on time and under budget showcased the integration of engineering and geoscience disciplines to address current public concerns regarding the environment.

Currently, 18 High-Hazard sites have been rehabilitated – the remaining 13 are under rehabilitation. The Provincial liability for orphaned and abandoned mines is predicted to drop considerably by the end of 2012, when 29 of the 31 High-Hazard sites should be rehabilitated.

The Association is pleased to recognize the Manitoba Mines Branch, Stantec and AMEC team by Certificate of Achievement Award for their excellent work on the project: 'Rehabilitation of Abandoned Mine Sites in Manitoba.'

Leadership Award

Doug McNeil, P.Eng., M.Eng.

By APEGM Awards Committee

On June 26, 2009, Minister of Infrastructure and Transportation Ron Lemieux announced the appointment of Doug McNeil as Deputy Minister of Manitoba Infrastructure and Transportation effective June 29, 2009. In 2011, as Deputy Minister, Doug led the Province's response to the 1 in 300 year flood of the Assiniboine River including development of the 100 Million Dollar flood relief channel from Lake St. Martin to Lake Winnipeg. These works were conceived, designed and constructed in an unprecedented six-month timeframe under Doug's leadership and vision.

Prior to being appointed Deputy Minister, Doug spent the previous six years with the Manitoba Floodway Authority as Vice-President of Engineering and Construction, and Vice-President of Hydraulics. He played a major role in the environmental approval process and was the Floodway Authority's chief spokesperson at the Clean Environment Commission Hearings. He was responsible for all aspects of design and construction of the Floodway, including the West Dyke, the hydraulic structures (Inlet Control Structure, the Outlet Structure and other drainage structures) and the bridges, associated highways and railways. Doug was instrumental in completing greater than 90% of the Red River Floodway Expansion Project.

As vice-president of engineering and construction, and vice-president of hydraulics from 2003 to 2009 for the Manitoba Floodway Authority (MFA), Doug McNeil's contributions resulted in the MFA receiving a number of distinguished awards:

June 2008
International Association of Macro Engineering Society (IAMES) recognized the Red River Floodway as one the worlds engineering marvels

June 2010
Canadian Society for Civil Engineering recognized the floodway as a National Historic Civil Engineering Site

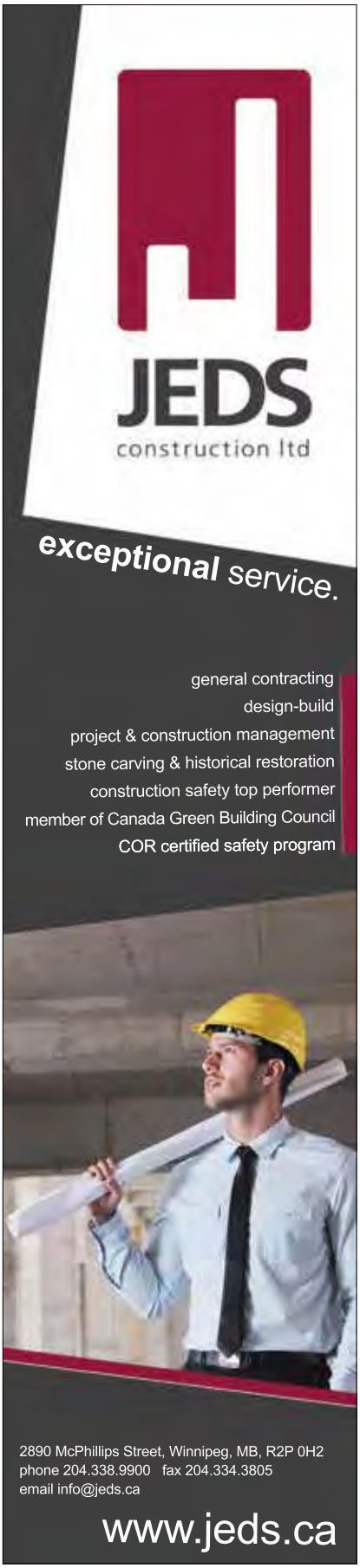
June 2010
Manitoba Service Excellence Award for Innovation was awarded to the Manitoba Floodway Authority

Executive Director Grant Koropatnick, P.Eng.; Awards Committee Chair Ganpat Lodha, P.Geo.; President Dawn Nedohin-Macek, P.Eng.; Award Winner Doug McNeil, P.Eng.; Past President Adam Pawlikewich, P.Eng.

October 2010
Association of Professional Engineers and Geoscientists (APEGM) recognized the MFA for an Outstanding Achievement Award

The Floodway Expansion Project was initiated after the 1997 Red River Flood which resulted in water levels in Winnipeg that took the existing flood control system, including the primary line of defence, gate control structures, flood pumping stations and the floodway channel itself to their absolute limits. The original floodway capacity was designed to accommodate a 1-in-160 year flood. Following the 1997

"As vice-president of engineering and construction, and vice-president of hydraulics from 2003 to 2009 for the Manitoba Floodway Authority (MFA), Doug McNeil's contributions resulted in the MFA receiving a number of distinguished awards."



> "Doug's body of work, leadership, and commitment to the profession is truly impressive, particularly during a time when the engineering profession, as a whole, is being challenged and questioned by those who do not appreciate the leadership, vision and skill required to accomplish these great engineering works."

flood, however, the existing capacity was estimated to be closer to a 1-in-100 year event.

Work began on the 665 Million Dollar expansion in 2005 following the various engineering studies and environmental approvals that where required prior to starting actual construction. Doug was instrumental in providing the necessary leadership and vision for this project to proceed. The capacity of the expanded floodway was increased from 1,700 cms (60,000 cfs) to 4,000 cms (140,000 cfs) or approximately equal to 1-in-700 year flood event. It is expected to prevent more than 12 Billion Dollars in damages if another 1-in-700 year event where to hit the City of Winnipeg without the expanded floodway.

Prior to joining the Manitoba Floodway Authority, Doug spent 20 years with the City of Winnipeg in the Water and Waste Department in various engineering positions that covered water, wastewater, land drainage and flood protection disciplines. As senior engineer in his latter years at the City, Doug led the land drainage and flood protection planning branch and this responsibility prepared him for a lead role in fighting first the 1996 flood (which had a magnitude similar to the 1979 flood) and then the 'Flood of the Century' in 1997. Following these flood experiences, Doug took a one-year secondment opportunity with the City of Winnipeg CAO Secretariat as project coordinator on the Winnipeg Development Agreement. On his return to the Water and Waste Department he managed the Federal/Provincial cost-shared flood proofing projects in the City. Doug also served on technical advisory committees of the early studies related to Floodway Expansion as the City of Winnipeg's representative.

Doug McNeil is also currently the President of the Transportation Association of Canada (TAC), a national association with a mission to promote the provision of safe, secure, efficient, effective and environmentally and financially sustainable transportation services in support of Canada's social and economic goals.

He also serves on a number of boards including:

- Manitoba Water Services Board – Vice Chair
- Manitoba Floodway and East Side Road Authority – Chair
- Western Transportation Advisory Council (WESTAC)
- North America's Corridor Coalition, Inc. (NASCO)
- Deputy Ministers' Committee on Emergency Management and Public Safety
- Council of Deputy Ministers of Transportation and Highway Safety
- Churchill Gateway Development Corporation Board
- Conservation Districts Commission

Doug's body of work, leadership, and commitment to the profession is truly impressive, particularly during a time when the engineering profession, as a whole, is being challenged and questioned by those who do not appreciate the leadership, vision and skill required to accomplish these great engineering works.

In recognition of his outstanding leadership and scientific knowledge applied to benefit Manitobans and the nation, the Association is pleased to present the Leadership Award to Mr. Doug McNeil.

An introduction to APEGM's new President

Dawn Nedohin-Macek

By Scott Kelman

At its recent AGM, APEGM introduced new President, Dawn Nedohin-Macek. Dawn took the time to answer a few questions giving some insight as to who she is and what her goals are during her time as president.

Can you tell us a bit about your life growing up and how that influenced your career choice?

My two sisters and I grew up in Morden, Manitoba in a family of agrologists and farmers. With my entire family having been in the farming business, I was the first to venture into engineering. It did not stay that way for long, as my younger sister followed in my footsteps. Further cementing our ties to the profession, we both ended up marrying engineers as well. My husband is an electrical engineer and we have two daughters aged four and six.

In my early days, I was interested in computers, fine arts and english. I attended the University of Manitoba, graduating in 2002 with a Computer Engineering degree. While there, I took an 18-month industrial internship with the Manitoba HVDC Research Centre that provided great experience working in an engineering environment and really helped me find employment when I was done.

I thought engineering would be a great degree because of the career opportunities it afforded me when I completed my education. I was really looking for a challenge after high school and engineering fit the bill. The challenges, along with the problem solving are what really drew me to the profession. I love looking at a problem and finding ways to come up with a solution. That is exactly what my job entails as an engineer – trying to solve problems to make things easier for people.

What has been your connection with APEGM up until now and are there other organizations with which you have been involved?

I was heavily involved with the Institute of Electrical and Electronic Engineers (IEEE), first as a student and then as chair of Graduates Of the Last Decade group. The committee originally consisted of only two members, however, that number increased to 12 during my tenure. We held many joint events in partnership with CTTAM and APEGM. I eventually became chair of the Winnipeg Section, which covers all of Manitoba and Northwestern Ontario. During my year as chair, I was given the opportunity to travel to an event in Tampa where section chairs from around the world attended. It was a wonderful educational opportunity for me. While I was chair, I also served as the liaison for APEGM's Women in Engineering Committee. In addition, I sat on the IEEE Women in Engineering Committee for a number of years. After receiving the award for Member in Training, I served on the APEGM Awards Committee for a couple of years as well.

As incoming president, what are your short- and long-term goals for APEGM, and what challenges do you see APEGM facing?

I am looking forward to doing some business planning and goal setting with all of our Councillors. This will help me better understand what everyone wants to achieve. Since my term is only one year, I would like to work with the Councillors and hopefully create some continuity. We will continue to work on our advocacy responsibilities and develop a framework for it. With such a framework in place, when engineers, or the public, see something related in the news or are concerned about something that engineers should be involved in, there is a way for them to evaluate whether or not the association should be involved as well. Such a framework will also give council some guidance as to whether or not our involvement is warranted.

Another area in which I would like to focus is a membership-related target that was set up by Engineers Canada. It is called 30 by 30, which means they would like 30% of registered or licensed engineers to be female. Right now, that number is about 10%. I would like to share my story with high school students and engineering students in university. By letting them know what it means to be an engineer and what it is that engineers do, it would raise our profile. If you go to any high school, they can tell you what a doctor or lawyer does, but not so for an engineer. I feel the reason for this is that, by the time the public receives our product, all the design work and testing is complete and they only get to see the end result. We need to create an enhanced awareness of engineers and what our work entails.

What should members expect from you during your term as president?

My goal is to be highly visible in the public, putting myself out there, talking about engineering as much as possible. I recently did an interview with CBC entitled *Engineering is for girls* that can be found on the University of Manitoba website *http://umanitoba.ca/news/blogs/blog/2012/11/08/engineering-is-for-girls/*. I will always be available to answer questions or take advice.

A year from now, what do you want members to remember you by?

I hope that people see me as a president who was accessible and enthusiastic, who answered anyone's questions and addressed them as best as possible. I want to be remembered as someone who promoted engineering to the fullest extent.

Meet your new Councillor

Guenter Schaub, P.Eng.

By Scott Kelman

Guenter Schaub, a structural engineer with Tower Engineering Group, is one of two new additions to the APEGM Council announced at its AGM. Born in Germany, 5-year old Guenter and his family walked through the doors of Winnipeg's Union Station on May 2, 1960. After emigrating to Winnipeg, he grew up in the West End where he attended Gordon Bell and later moved to Miles Mac high school in East Kildonan. He then graduated from the University of Manitoba in 1976.

As a young boy, Guenter's parents encouraged him to get a universityeducation. One line they used, that sticks with him to this day: "go to school so you can work with your brain and not your back." Although they encouraged him to get an education, his choice to become an engineer was made on his own.

An avid science fiction fan who grew up in the time of NASA and its Apollo program, Guenter became enthralled with what he saw and is certain that it was a major influence in his decision to become an engineer.

After beginning his post-graduation career with Dominion Construction (now Stuart Olson Dominion) and leading up to his current position, Guenter has always believed in the importance of giving back to the profession. He served on a committee when APEGM first began negotiations with the Manitoba Association of Architects (MAA), long before the task force that exists now was even in place. He has also been a long-serving member of the ERC.

The area in which Guenter most wants to make a difference and in which he feels there is the biggest need for improvement is raising the profile of engineers in Manitoba. He wants to peak the interest of the 6,000 engineers as to what APEGM is all about. "There seems to be some sort of indifference or disconnect," he says, "and I would like to make APEGM more relevant and meaningful to those who are disenfranchised. Any engineer working on an APEGM committee will tell you the importance of the work he or she does, and I want to get this message across to all engineers."

Increasing the interaction between the profession and the university is also one of his priorities. In this regard, Guenter would like to see more opportunities for practicing engineers to visit university classrooms to answer questions and/or give presentations on topics of interest to the students. This might be one way to better inform and prepare the engineering graduates for their careers in the real world.

Knowing what he wants to accomplish and setting about doing so has always been a strong suit for Guenter. We look forward to his contributions to our APEGM Council.

Nominate Your Colleagues for 2013 APEGM Awards

Nominations for deserving Professional Engineers and Geoscientists are open now for seven APEGM Awards for the year 2013.
For details visit website: *http://www.apegm.mb.ca/Awards.html*

Please take time to complete nomination form and forward to the Awards Committee before February 1, 2013. Your initiative and recommendations are essential to recognize and honor deserving professionals from our membership at the next Awards Gala ceremony.

Ganpat S. Lodha, Ph.D, P.Geo., APEGM Awards Committee Chair

Are we too connected?

By Grant Koropatnick, PEng

Staying connected is a good thing, right? Being in touch with coworkers, managers, clients and significant others is always a good thing. There are many ways to accomplish staying in touch: telephone, email and social media like Facebook, Twitter or Skype. Heck – you can even send an old school post card if it fits the timing and context. Some forms of communication are more preferred than others. Generally, most of us use a smart device equipped with all the apps for email, text, browsing, photograph and video/imaging.

Have you ever thought that you might be too connected? I was at a large international engineering conference last summer and made a few observations. Are we too connected? Here is what I observed through the words of author Thomas DeLong:[1] "You could watch these [engineers] over the days, walking around the conference centre completely immersed in their hand-held devices. Was their electronic messaging so critical that they could not bother to communicate with their fellow [conference delegates]? My suspicion is that while these [engineers] were out of the office, they became anxious about work. They started worrying about what was going on in their absence. They found false reassurance with their frantic emailing and messaging; it helped them allay their anxieties and feel connected with work. In reality, of course it was one way to avoid open and honest conversation with fellow [engineers] – conversations that might have challenged them and called some of their beliefs into question."

Did you catch the news story about the amount of extra time spent on work related communication after work hours? More than 80 per cent of Americans (likely Canadians too) continue working when they have left the office, for an average of seven extra hours each week – almost another full day of work, according to a recent survey by Good Technology.[2] Apparently many of us spend the time on our smart phones; checking emails, sending texts, browsing articles and staying connected with our work.

Some days, I wish I had an extra day in my week because of the false sense of falling behind. Other days, I think we are too connected to our devices. Many days I lament that I do not get enough time with the people I love. So what is the solution? Priorities. I need to give myself permission to turn off the device for a bit. Take a breath. Continue walking briskly, but stop the frantic running. Focus on the people and priorities that need attention. Forget about the ones that do not. Can I utilize my device to connect with my wife? My son and daughter? Sure. Facetime is a cool medium. But I would much rather meet at our favourite restaurant, coffee shop, or in the living room at home with a glass of something special in hand. Real connecting – not virtually.

Sometimes it takes deliberate planning. For example, this year our family is doing Christmas in November. A family dinner to set schedules, confirm other important dates and divvy-up all the decorations and boxes of stuff prior to the busy month of December. I encourage you to do the same. As the holiday season approaches, take a moment to set some different priorities and enjoy real time with friends and family. Merry Christmas, Happy Hanukkah, Kwanzaa, Muharram, Pancha Ganapati, et al.

1 Delong, Thomas J. "Flying Without a Net" Harvard Business Review Press, Boston, 2011, p. 110.

2 Web Source: *http://www1.good.com/news/press-releases/current-press-releases/161009045.html*

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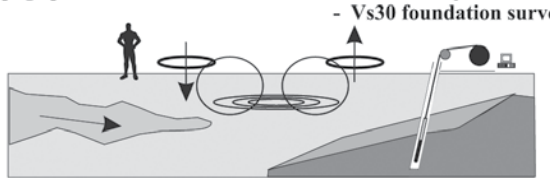

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by Joan Anderson

A Mother's Tribute

From the moment my son could walk he presented me with a challenge; his mind was inquisitive and coupled with his very active little body he was a handful. From the moment he could speak, his questions were constant and relentless, as he needed to know how everything worked and would dismantle whatever was in his sight to find out. When he was very young he would choose documentaries over other types of programming on television and he had a passion for anything that was real. All throughout his school years he seemed different than many kids and was never content to let an issue lie or a question go that wasn't answered to his satisfaction.

There was something familiar about his curiosity, though. Having come from a family full of engineers I had seen this type of enquiring mind before and I knew he was headed for a career in engineering. When he finally did enter the Faculty of Engineering at the University of Manitoba I remember my delight as I walked into the kitchen at home one day and there around the table were other kids from around the city and the province discussing pistons and gaskets just like he would do. I felt like he had finally met other kids who were on the same wavelength and I knew he had found his niche.

He was in Mechanical Engineering and his favorite subject was Thermodynamics. Instead of asking me questions he was now teaching me the effect temperature has on materials and moving parts. As a parent I was thrilled with his enlightenment and was so happy to be witnessing another engineer in the making in our family.

After second year, Reid got his first job in the engineering field working in the Distribution Standards Department for Manitoba Hydro as a summer student. He was so excited to be learning on the job and was inspired by some specialized professionals who were experts in their field. To see practical applications of mechanical design helped him see the tangible end to years of schooling. The summer was going well and he was content. He took a week off to attend a LIDAR convention in Toronto with his father who is a pilot and a Professional Engineer. This further built his excitement about his future and expanded his awareness of another type of engineering.

Upon Reid's return from Toronto I left on a vacation. On my first night in Calgary after visiting family in Montana I had crawled into bed only to be woken up by my father a half hour later. Reid had been in an accident on his dirt bike and his injuries were serious. He was a risk taker and had been in the hospital many times throughout his childhood but his injuries were usually minor. I was used to getting calls that he had been injured and I had a strange sense of calm despite the distance and the information about the severity. Then came a call I didn't expect-his father told me we had lost our baby. In the wee hours of July 4, 2009 at the age of 22, Reid passed away.

Stunned is the only description of my state over the next few hours, days, weeks and even months of my life. It is a very surreal experience that a parent never gets used to. We have so much emotional investment in our children; our psyches are intertwined. I was not present for my other son, who was

> "It is my hope that some of the achievements of engineers who receive the award as students will be achievements that Reid would have accomplished himself if he had lived to enjoy his career."

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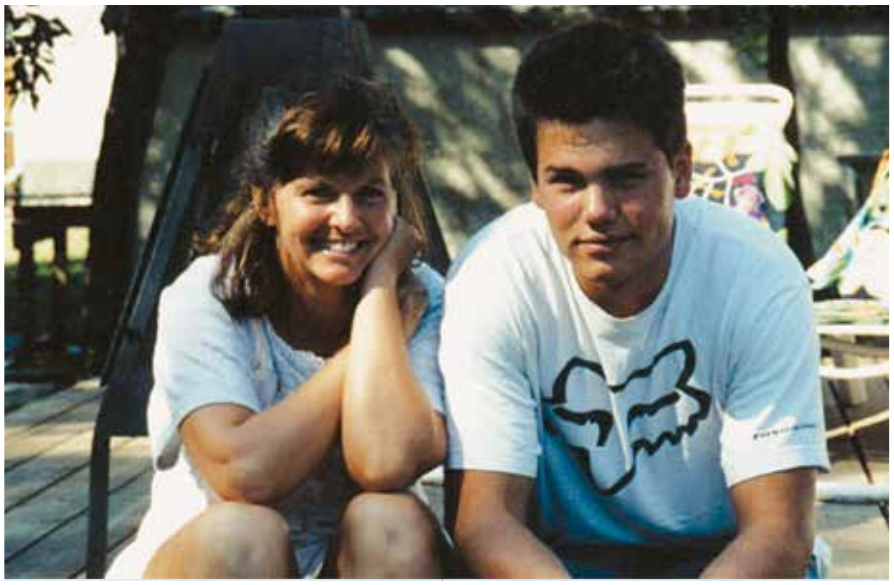
experiencing his own grief and my co-workers picked up the slack at work as my brain tried to focus on daily tasks. I joined a group called The Compassionate Friends, all parents who had lost children. They assured me that the despair I was feeling was normal, that I was not going crazy. They together with friends, family, counselors, a meditation coach, a yoga instructor and the gym helped me heal bit by bit.

Disbelief plagued me as I came to terms with reality. Reid had been smart enough to get himself out of precarious situations in the past, why could he not this time? I missed his intellect and the opportunity to discuss things with him. I was so proud of him throughout his life, now I had to come to terms with the fact that his time here was over but that I could still be proud of his accomplishments and treasure the imprint he left on this earth. Now I had to do something to continue his lead.

Within two days of Reid's death, his girlfriend and another close friend came to me and said they thought we should start a scholarship in his name. At such a devastating time a person feels so helpless and anything constructive that can be done, any good that can come from such tragedy, sounds very appealing.

Over the next few months I put some thought to the kids' idea and started talking to the Department of Philanthropy at the University of Manitoba. I was delighted to learn how easy it would be to establish an endowment fund and how much help was available to me. I talked to Dr. Doug Ruth, the Dean of Engineering at the time, and he agreed a scholarship would be a wonderful tribute to Reid's memory and offered to help however he could.

The more I thought about Reid and his life as a student, the more I realized a couple of things; firstly, although he was bright, he was not a keener...he lived a balanced life and in fact he struggled with calculus at times as I am sure most engineering students do. Secondly, he struggled with finances. Although he had an RESP it was not enough for his entire education and he had to work to be able to build his dream. So in



keeping with his character I thought it would be more appropriate to make his fund a bursary rather than a scholarship. Together with the staff at the university we established the terms of reference for the **Reid Anderson Memorial Award for Mechanical Engineering,** which would be paid annually to students entering their 3rd year of Mechanical Engineering, right where Reid left off.

My family and I started the fund and then Dean Ruth and Reid's friends and I sent out 500 letters to family, friends and co-workers. The fund grew substantially in the first few months. Many APEGM members donated and we have been very grateful for the generosity and kindness shown by so many people. Then in May of 2010 we held a social in Reid's Memory. All of the funds from that event also went to the fund which today sits at almost $70,000 and started awarding bursaries in November of 2011.

Dallas Beauregard was the first student to receive the award last year. In his words: *"I received the bursary November 14, 2011, for the amount of $2325. I am currently in my final semester in the Mechanical Engineering program. While I did not know Reid personally, he was in the Mechanical Engineering program at the same time as I was, and hearing of his passing was devastating. I am extremely grateful for receiving this bursary and extremely thankful to his family and friends for creating it. The bursary was a great help to me, and I'm sure it will help many more students for years to come. What a wonderful tribute to Reid's memory."*

The first year of grief is exhausting. It takes its toll emotionally, spiritually and physically. Fundraising at that time was a blessing because it gave me a goal, kept my mind busy and made me feel like something good could come from my son's death. It is my hope that some of the achievements of engineers who receive the award as students will be achievements that Reid would have accomplished himself if he had lived to enjoy his career.

To make a gift to the Reid Anderson Memorial Award for Mechanical Engineering please go to the University of Manitoba website: *umanitoba.ca/giving.*

- Click on "Make A Gift" and follow the link to the online donation form.

Or send a cheque payable to the University of Manitoba with a note on the Memo line –
Reid Anderson Memorial Award for Mechanical Engineering to:
Philanthropy
University of Manitoba
179 Extended Education Complex
Winnipeg, MB R3T 2N2

Or call Philanthropy directly at (204) 474-9195

Advocating in the Public Interest

Establishing A Framework to Engage Our Professional Obligations under the Act

By Roger Rempel, FEC, P. Eng. Chair, APEGM Advocacy Task Force

Advocacy and APEGM Obligations in *The Engineering and Geoscientific Professions Act.*

A review of *The Engineering and Geoscientific Professions Act* will confirm that our ***Act*** requires us to conduct our work in a manner such that we protect the public. How should our professions engage to meet this duty to protect the public?

Guidance on what is expected of us as an association, is set out in Section 3 of *the Act* together with the definitions in Section 1 of *the Act*. To save you reaching for your own copy of *the Act*, the purposes of the association are to (bold emphasis mine):

a) **govern and regulate the practice** of professional engineering and professional geoscience in Manitoba;
b) **promote and increase, by all lawful means in the public interest, the knowledge, skill and competency of its members** and students in all things relating to the professions of engineering and geoscience; and
c) **advocate where the public interest is at risk.**

Items (b) and (c) above came into effect following legislative amendments made in 2004.

The legislated professional regulation scheme across Canada has two components, each in place so that the public interest is served and protected:

i. Establishing and maintaining **standards of knowledge and skill** for members; and
ii. Establishing and maintaining **professional ethics.**

So, in Manitoba item (c) adds to those principles and creates another distinct responsibility for APEGM which in turn generates an important set of questions:

1. *Are we responding actively and effectively to our explicit obligations as laid out in Section 3 of the Act?*
2. *Do we, as an association, have the mechanisms in place to adequately assess, screen and react to issues requiring advocacy related to areas of our fields of expertise?*
3. *Are we responding to our obligations when it becomes a matter applicable to "advocating where the public interest is at risk"?*

APEGM's Structure and Ability to Respond to Stated Obligations

APEGM is already clearly and predictably active in purposes (a) and (b) of *the Act.* For the third purpose (c), relating to advocacy where the public interest is at risk, the answer is not so clear and predictable.

The History and Importance of Advocacy "Where the Public Interest Is at Risk"

The advocacy provision was used in 2005 during a confrontation between APEGM and the Manitoba Association of Architects regarding the jurisdictional provisions of the Manitoba Building Code.

A few years later, at 2010's APEGM Annual General Meeting, a resolution was adopted calling on Council to hold a Special General Meeting to consider whether APEGM should engage in advocacy regarding Manitoba Hydro's BiPole III Project, a project involving an electricity transmission corridor that Manitoba clearly needs but one whose optimal routing is highly controversial within the engineering and environmental communities. Legal counsel for APEGM Council reviewed the matter of public interest advocacy related exclusively to the BiPole III issue and recommended to Council not to advocate on matters related to BiPole III. An in camera decision was taken that there would not be advocacy.

From the perspective of some in APEGM's membership, the process in handling this issue lacked transparency. Following the decisions related to the BiPole III resolution, a number of us on Council believed that APEGM needed a framework to guide and assess its advocacy activities, with a goal of developing a more effective instrument that provides all APEGM members with a clear framework on which issues could be eligible for APEGM advocacy and how future issues could be objectively and transparently assessed for future advocacy actions. That led the Council to establish the Advocacy Task Force (ATF). As part of its mandate the task force was authorized to obtain a second legal opinion, one that was not limited to a single project, to comprehensively assess the extent of APEGM's obligation to advocate where the public interest is at risk.

Progress of the ATF

The ATF's workplan was established in January of 2012, and the task force was assembled with a roster of APEGM volunteers that included 3 APEGM Past-Presidents, 3 ACEC-MB (formerly Consulting Engineers of Manitoba) Past-Presidents, 2 Past-Directors of Engineers Canada, 1 APEGM staff member, 1 Public Representative active on APEGM's Investigation Committee for over 10 years, and 1 Past-Executive Director of APEGM. Two sitting Councilors, Messrs. Lemoine and Rempel serve on the ATF.

Figure 1 presents a timeline indicating several key deliverables and activities conducted by the ATF since its inception. This work included a comprehensive legal review by Bill Olson, Q.C., a lawyer and recognized specialist on crafting and reviewing government legislation, selected and retained by ATF. Mr. Olson's task was to review all aspects of legislation in *the Act* and to provide clarity and further understanding of the obligations we are responsible for under *the Act.* ATF considers this legal opinion quite robust and extremely clear: APEGM, as a result of the 2004 amendments to the Act, has an expanded obligation to advocate where the public interest is at risk. The ATF invites members to read the legal opinions for themselves. Members can obtain a copy of the legal opinions for their own assessment by writing the APEGM Executive Director and requesting them.

Additional details on ATF activities have been presented at the APEGM member meeting held on the evening of June 26th, at the APEGM Ingenium PD track, and at the AGM annual business meeting on October 26th.

A Preliminary Framework to Respond to our Obligations

ATF began its work in establishing a framework with a goal of allowing the association to provide a technical forum

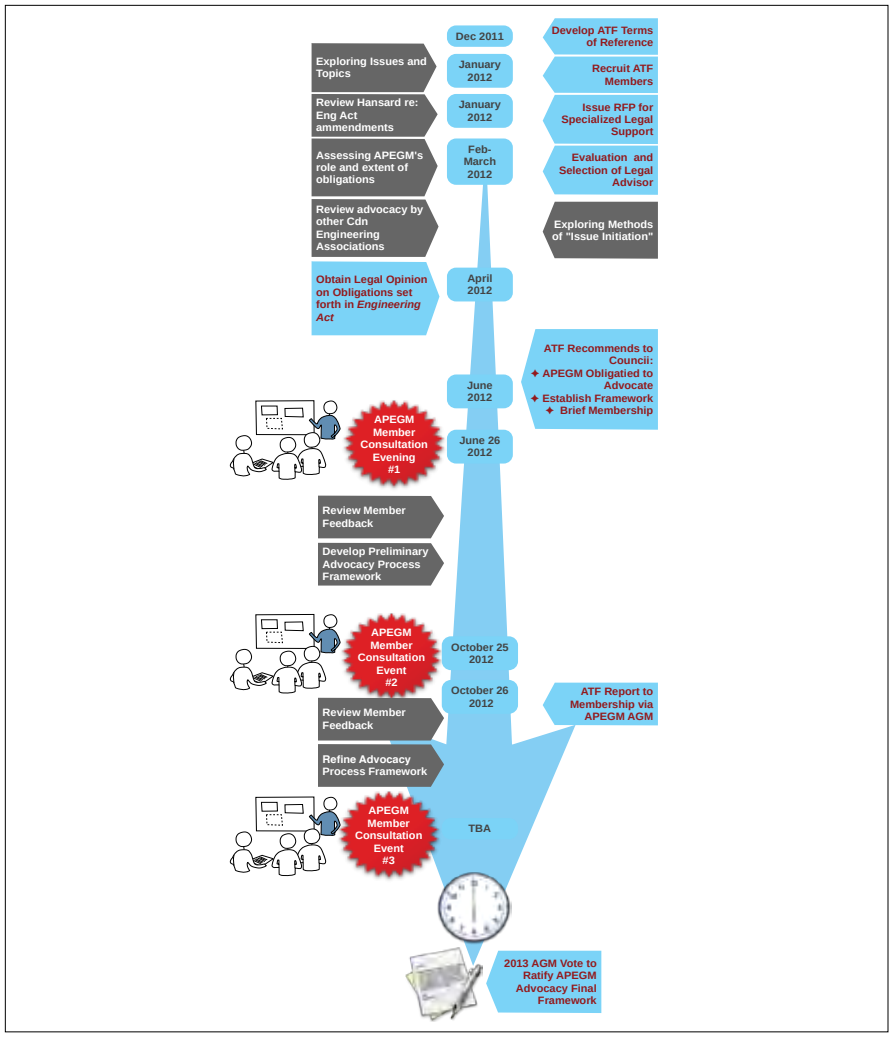
"atmosphere" in which technical enquiries are encouraged and given respectful treatment outside a political arena. In addition to this goal, ATF established guiding principles in developing a proposed framework for APEGM Advocacy in the Public Interest, including that:

- APEGM has an ethical obligation to advocate where the public interest is at risk, as do its licensed members
- Our obligation to ethics is a fundamental consideration in all assessment of advocacy where the public interest is at risk.
- Council composition changes annually, and as such the capacity to objectively respond to a given issue could fluctuate. Therefore mechanisms and transparency via an established process must be in place to ensure that the integrity of APEGM and the professions remain constant.
- Continuity and consistency are desired over the life of a given issue, even if the composition of Council changes during assessment of a given issue.
- Some public interest issues are bigger than APEGM or any given Council. Public and member perception related to potential conflict of interest must be aggressively managed. Structure and transparency are key tools to manage this potential perception.
- Distinct processes are needed for assessing issues where the public interest could be at risk and other issues related to APEGM's existing framework for addressing regulatory issues.

Figure 2 presents a flow chart describing key elements of the proposed framework.

In the proposed framework, the issues relating only to regulatory considerations are handled through APEGM's existing regulatory framework, shown in blue on the lower right hand side of Figure 2. The new elements of the framework relate to the proposed APEGM Issue Review Board and the set of dual filters that issues must pass through prior to eligibility for potential APEGM issue advocacy where the public interest is at risk. The Issue Review Board would be independent of Council and populated with a balanced, cross-sector panel of advisors with experience in the professions. Groups that might be called upon to serve on this Board could include APEGM Past-Presidents, sector-specific experts and representatives from APEGM membership with applicable expertise. The first filter for an issue under consideration is "does the issue relate to our expertise as a P. Eng. or P. Geo."?

Figure 1 – ATF Activity Timeline



If not, then the process stops, and the issue is rejected and the decision and rationale is clearly conveyed to parties who raised the issue, then to APEGM membership and lastly, to the general public.

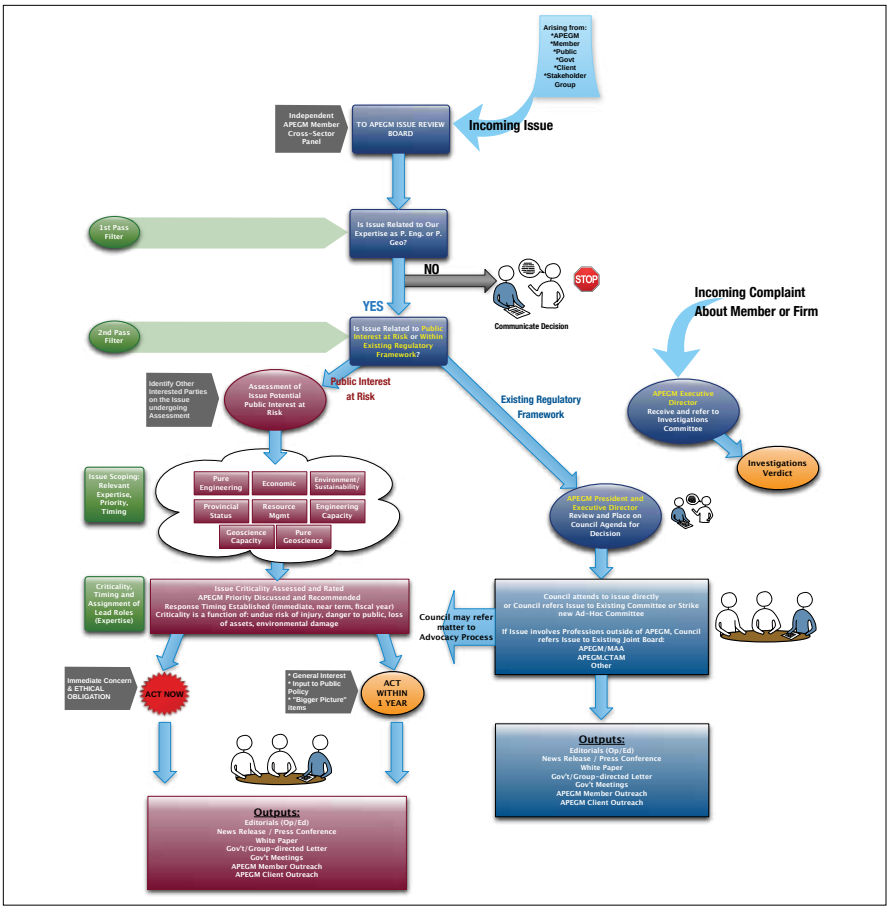
If the answer to the first filter is "yes", then a second filter is applied to categorize the issue as either a "Public Interest at Risk" issue or an issue "Within our existing regulatory framework". If the latter, then the issue is directed to APEGM's existing regulatory framework, and processed accordingly. If the former, then the issue proceeds to the new "Public Interest at Risk" framework. Once inside this process, APEGM would identify other interested parties related to the issue undergoing assessment. Further analysis of the issue takes place, including deciding upon the relevant expertise to address the issue, the priority of an APEGM response and the timing of this response. A number of areas of consideration would be applied, including those shown in blocks such as "Pure Engineering", "Environment/ Sustainability", "Provincial Status" and "Capacities". The preliminary framework shows several "blocks" that might contribute to this Issue Scoping, and others may be specified in accordance with consultations with APEGM membership.

Once the criticality, timing and assignment of lead roles of expertise is completed, issues related to immediate concerns and ethical obligations would be categorized under the "ACT NOW" priority while issues related to general interest, public policy and other "bigger picture" items would be categorized for action within "ONE YEAR" by APEGM. For both priority categories, a selection would be made to develop an APEGM Advocacy Response in the form of a range of issue-appropriate potential outputs, ranging from government meetings to news releases, white papers and other outreach.

The Need for APEGM Member Input

ATF's preliminary framework still requires membership input to refine certain key considerations. It is the ATF's view that these

Figure 2: Preliminary Advocacy Framework Process Flow



can only be developed comprehensively through the voice of APEGM members. The input from membership will be crucial in refining the proposed framework and specific criteria applied in its application to emerging issues brought to APEGM's attention.

Specifically, ATF is looking for member input into key considerations such as:

- What qualifies as a "concern of the public at large"?
- What would constitute sufficient impact to public's "well-being" to justify APEGM advocacy?
- How much "inconvenience" would constitute a threshold for a Go or No-Go on issue advocacy by APEGM?
- What is our preferred format of advocacy? Private with involved parties? Would it be public by way of open statement or a combination of the two formats?
- APEGM would likely need a single voice to "speak" for the association when it advocates. Who might this duty be assigned to?

The ATF is grateful for the submitted opinions and information coming from APEGM members so far. ATF has benefitted from key contributions from individual members who are offering information such as relevant case studies describing instances where timely advocacy by knowledgeable professionals could have saved lives and property. We have also received details from other engineering associations throughout the world from APEGM members who practice internationally, providing useful examples where professional associations have provided White Papers or other position statements in order to ensure that their professions' voices are heard when issues related to their expertise enter the public discourse. We encourage APEGM members to continue to offer us their insights by emailing the ATF at *apegmatf@gmail.com*.

This Challenge is an Opportunity for Our Professions

The ATF's proposed framework is a work in progress. The issue of "advocating where the public interest is at risk" is likely an uncomfortable one, as it departs from our previous assumptions on the nature of our obligation. As a result of the amendments to the Act in 2004, our obligation requires us to take a more prominent role in the public realm on issues related to our expertise. As we take on this role we have significant opportunity to establish APEGM and its membership as trusted advisors to government.

Furthermore, recognizing our expanded obligation and developing a transparent and predictable process for evaluating incoming issues relating to advocacy where the public interest is at risk will allow us to be more effective in the eyes of the public. Since 2004, the public has a right to expect the official engineering and geoscience voice of the professions to state a credible position related to the expertise of our professions.

Please join us at ATF by contributing your voice, as we develop the criteria and process to help us serve the public in the best and most effective way we can to meet our full obligations under *the Act*.

ATF is working towards finalizing and ratifying a framework by means of a new by-law by APEGM AGM 2013.

ATF Roster:

John Woods, FEC, P. Eng.
Peter Washchyshyn, FEC, P. Eng.
Councilor Rick Lemoine, P. Geo.
Mary-Ann Gibson, Public Representative
Dave Ennis, FEC, P. Eng.
Lorraine Dupas, APEGM
Councilor Roger Rempel, FEC., P. Eng. ATF Chair

Roger Rempel, PEng, FEC, Senior Environmental Engineer, Associate - Stantec – Winnipeg, Manitoba.

Roger Rempel has over 20 years of experience in environmental assessment, quantitative risk assessment, criticality assessment, environmental systems modeling in air and water quality, and public communications. Roger was a Principal at TetrES Consultants Inc., an environmental consultancy that joined the Stantec organization in June of 2010. He has contributed to and managed multi-disciplinary study teams applied to a range of operations including municipal water and sewer infrastructure, hydroelectric power generation developments, chemical plants, manufacturing facilities and agricultural/food processing plants throughout Western Canada. Roger is an elected councilor on the APEGM council and chair of the ATF – Advocacy Task Force.

Introducing the Committee for Increasing the Participation of Women in Engineering

By M. L. Wadelius, P.Eng.

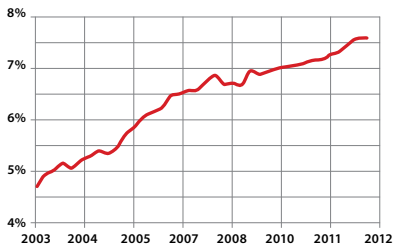
The Committee

The Committee for Increasing the Participation of Women in Engineering (CIPWIE) monitors and works to increase the participation of women in engineering with respect to recruitment, retention and equity for APEGM. Expected outcomes of the group are to increase the participation of women in engineering, measure the Association's progress with respect to recruitment and retention, and to provide advice, guidance, and volunteer efforts in matters related to this topic. The graph below demonstrates that the percentage of APEGM female practicing engineers remains low. The percentage of female engineers is increasing, but is low compared to increasing female participation in other professions. Additional research demonstrates that the percentage of female to male EITs is actually decreasing.

CIPWIE is composed of approximately 14 volunteers that are members and members-in-training, APEGM staff, and representatives both internal and external to APEGM. Both men and women are welcome. CIPWIE members represent private and public industry and governmental and educational institutions. The committee reports to the Executive Director and Registrar and meets approximately eight times per year on a monthly basis.

CIPWIE's commitment to increasing women's participation in engineering involves participating in outreach and development opportunities, collaborating with like-minded groups both within and external to APEGM, supporting research initiatives, providing information or advice to APEGM's Executive Director and Council, and reporting appropriate statistics in the committee's annual report.

Percentage of APEGM Practising Engineers that are Female



Why Increase Women's Participation in Engineering?

The Canadian Coalition of Women in Engineering, Science, Trades and Technology (CCWESTT) notes that women represent one of the largest untapped human resources in engineering. Women's increased participation and advancement in the workforce will bring significant economic benefits to women, their families, the organizations they work for, the communities they live in, and the Canadian economy at large. CCWESTT has noted the following benefits to increasing the number of female engineers:

- Labour Shortage Solutions: It is becoming increasingly important to hire from a wider talent pool
- Broader Talent Base: Women are entering post-secondary education programs at an increasing pace and now represent the largest percentage of new entrants overall. Employers would benefit to tap into this large, well-educated source of talent.
- Increased Innovation Capacity: The modern workplace is highly integrated with technology and is constantly adopting new ways of thinking and working. Studies show that diverse groups are less likely to develop a psychological phenomenon called "groupthink", that occurs in groups when the desire for harmony in decision-making overrides free thought and limits creativity. Diversified populations in an organization can maximize innovation potential.
- Expanded Market Influence: Organizations whose employees reflect the diversity of its Client base will be better prepared to understand the needs of their market and identify new opportunities within. Studies show that women influence approximately 80% of consumer purchases in Canada.

CIPWIE is leading the organization of a professional development conference that will celebrate and inspire women in Engineering, Science, Technology, and Trades. The one-day conference will be held May 10th, 2013 in Winnipeg. If you are interested in volunteering for CIPWIE, the conference Organizing Committee, or to volunteer at Outreach events, please contact the APEGM Volunteer Coordinator Diana VanderAa at *volunteer@apegm.mb.ca***.** CIPWIE is also interested in opportunities available in the community to assist with the committee's mission. Please visit the webpage on the APEGM website at *http://www.apegm.mb.ca/CIPWIE.html* and contact the committee as described.

UPCOMING EVENTS for CIPWIE

You can expect to see CIPWIE volunteers at numerous events throughout the year, so here is a sample of some upcoming events.

- UMES Student Networking Dinner – January 2013
- The 6th Annual "Women as Career Mentors Event" – March 2013
- Sponsored youth all-female team at APEGM's Spaghetti Bridge Competition – March 2013
- MCWESTT 2013, the first ever Conference of the Manitoba Community for Women in Engineering, Science, Technology, and Trades will be in Winnipeg, May 10, 2013
- Support to the University of Manitoba's Women in Science and Engineering Kid-netic Energy Group

Sources: "Increasing Women in SETT [Science, Engineering, Trades & Technology] The Business Case" brochure: *www.ccwestt.org* and *www.winsett.ca*

By Michael Gregoire, P.Eng.

Clarifying a Common Question

Although I have written in the past about jurisdiction, questions relating to whether or not an geoscientist/engineer or geoscientific/engineering corporation should be licensed in Manitoba are the most frequent ones that I receive. Below, I am revisiting this question and have divided it up based on criteria that help to determine an answer to the question. Before considering each criterion, I believe that a classification of geoscientific/engineering services is in order.

In considering jurisdiction, a distinction needs to be made between the two major types of geoscientific/engineering services that members provide. One is generic in nature, where the services include a determination of the parameters under which the advice/design/etc. is acceptable. I will call this Type 1. The other is where the services include defining appropriate parameters for the advice/design/etc. such that it will meet the client's needs. I will call this type 2.

The former is generally found in the world of manufacturing, where a company creates 'widgets.' It also, generally, requires additional Type 2 geoscientific/engineering services in that the end design/implementation must determine the conditions in order to choose an appropriate widget. A common example of this Type 1 and Type 2 combo is in the HVAC world. A manufacturer designs an air conditioner and provides documentation which indicates that their widget can produce x BTU/h, y CFM, etc. Then, a consultant provides further engineering by telling his client that their building will need an air conditioner that provides (x-n) BTU/h and (y-p) CFM. Finally, a contractor or owner chooses the air conditioner based on the two types of engineering services.

"In considering jurisdiction, a distinction needs to be made between the two major types of geoscientific/engineering services that members provide."

Location of Project: The importance of defining the above is that the question of "is the project located in Manitoba?" is often too broad in order to make a determination as to whether or not APEGM has jurisdiction. In the HVAC example, the public is affected by both the engineering implemented to create the widget (Type 1) as well as the further (Type 2) engineering. However, it is not reasonable to expect that the designer of a widget be registered in every jurisdiction in which their product will be used. Conversely, there is a very reasonable expectation that the provider of the Type 2 engineering services, those that are specific to Manitoba, be done by an engineer registered with APEGM.

I was once challenged with the argument that a person located in some remote location has every right to design for an engineering project in Manitoba. I concede that this is true so long as the design is never communicated to a client nor realized in any way. Not only is it logistically impossible, but it slides into the realm of policing thoughts.

It is when geoscientific/engineering advice crosses the border that APEGM gains jurisdiction. In order for a project to proceed within Manitoba, a locally-situated contractor or owner must receive the geoscientific/engineering advice. Whether this advice comes to our province physically or digitally, with or without a visit by the geoscientist/engineer, it is the arrival of that advice that affects Manitobans, whom APEGM is mandated to protect. So, an unregistered geoscientist/engineer located anywhere in the world may scheme away on a project intended for Manitoba until they issue their advice to an owner or contractor in Manitoba. Then they need to be registered. If we don't follow this, then we fail to protect the public with respect to engineering.

Location of Client: Once again, APEGM is mandated with protecting the public of Manitoba. The public includes a client who is the direct recipient of geoscientific/engineering services, regardless of where

click HERE to return to table of contents

the project is located. Take, for example, a local corporation that implements the design of a manufacturing plant in India based on the engineering services of a Bermudan engineer. If the design was faulty and the plant fails due to the faulty design, then the local corporation will experience economic loss; i.e. the public of Manitoba has been adversely affected.

In Manitoba, we have a specific prohibition against any person receiving geoscientific/engineering services from a corporation or partnership that is not licensed by APEGM. At first glance it seems like an odd prohibition, but it is another example of the fact that APEGM is tasked with protecting our public, including corporations. This prohibition tells Manitobans not to receive geoscientific/engineering services from a corporation unless they've been vetted by APEGM, with the hopes of preventing or reducing the harm to those persons.

Note that a manufacturer is affected by the provision of engineering services of the engineers they employ to design a widget. Therefore, a manufacturer located in Manitoba must only use the engineering services of employees or outside consultants that are registered with APEGM.

Location of Corporation Providing Advice: This question is not as clear cut as it initially appears. Should a geoscientist/engineer located in Manitoba be registered with APEGM if their clients and projects are never located in my Manitoba? APEGM is tasked with protecting the public of Manitoba, not the public of any other jurisdiction. Therefore, generally speaking, the mere presence of an geoscientist/engineer within the borders of Manitoba should not be a requirement for registration with APEGM.

The exception to this relates to the use of the title. If, at any point, an engineer represents themselves to Manitobans as an engineer, then they must be registered with APEGM. This holds true whether the individual lives here, is making a short trip to Manitoba, or is corresponding with Manitobans.

Hopefully the above clarifies the question of jurisdiction for all of you. There will undoubtedly be situations that do not fall into these descriptions. As always, I welcome any questions that you may have with respect to compliance or other professional standards issues. Email me at: *mgregoire@apegm.mb.ca*

WHAT IS THE CONFERENCE?

Introducing the Manitoba Community for Women in Engineering, Science, Technology (MCWESTT). The first bi-annual one day MCWESTT professional development conference will be held Friday, May 10, 2013.

WHEN AND WHERE?

When: Friday, May 10, 2013 from 7:30 am to 4:30 pm
Location: The Fairmont Winnipeg

WHAT TO EXPECT IN 2013?

- A freshly renovated conference space filled with local professionals and students.
- Two world class keynote speakers, a lively panel discussion, and a choice of 3 out of 12 break-out sessions on a variety of topics ranging from "successful workplace mentoring" to "men taking paternity leave" for a total of 5.25 hours of professional development time. Plus enjoy plenty of networking opportunities during breaks and meals.
- Delicious breakfast and lunch served on location plus catered coffee breaks.

WHO IS ORGANIZING?

A diverse committee currently comprised of engineering, agrology, academic, and NSERC professionals. APEGM's Committee for Increasing the Participation of Women in Engineering (CIPWIE) is helping to make this conference a reality!

HOW TO GET INVOLVED?

Mark the date on your calendar, registration will open in January 2013 through the APEGM website!

- Contact APEGM's volunteer coordinator if you are interested in volunteering at *Volunteer@apegm.mb.ca*. A variety of volunteer opportunities are available!
- Have a topic you are interested in presenting at a break-out session? Contact the MCWESTT 2013 Program and Outreach Coordinator Heather Smart at *hsmart@mts.net*.
- Interested in Sponsorship? Sponsorship packages are available online at *www.apegm.mb.ca/MCWESTT2013/*

Welcome New Members

B.K. Adu-Quaye
A. Agarwal
A. Ali
J.R. Alves
K.G. Ashkinadze
S.C. Baker
A.J. Barnes
D.L. Berringer
J.E. Bisharat
N.J. Bockstael
M.T.H. Bowers
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A.D. Braun
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M. Dubois
M.A. Durand
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M.F. Hanna
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C.M. Regier
S.L.E. Reid
S. Roy
R. Roy Chowdhury
M.Y. Sam
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R.C.R. Schram
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S.K.C. Siu
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J.C. Tan
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S. Tremblay
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P.J.W. van der Giessen
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D.G. Wolsey
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Y. Wu
L. Yin
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J.M. Bais
B.J. Barry
N.S. Bartel
S. Boakye-Yiadom
J.A. Boscow
A.R. Budowski
A. Buisse
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H.W. Chui
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T. Ge
D.P. Heinz
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D.E. Postlewait
K.L. Sandman

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Ronald Henry McCasin
Ronald Ivar Meisters
G. William Nickerson

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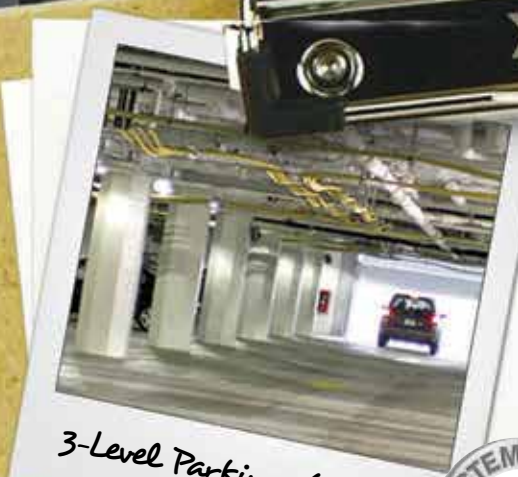

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