THE KEYSTONE PROFESSIONAL

Autumn 2008

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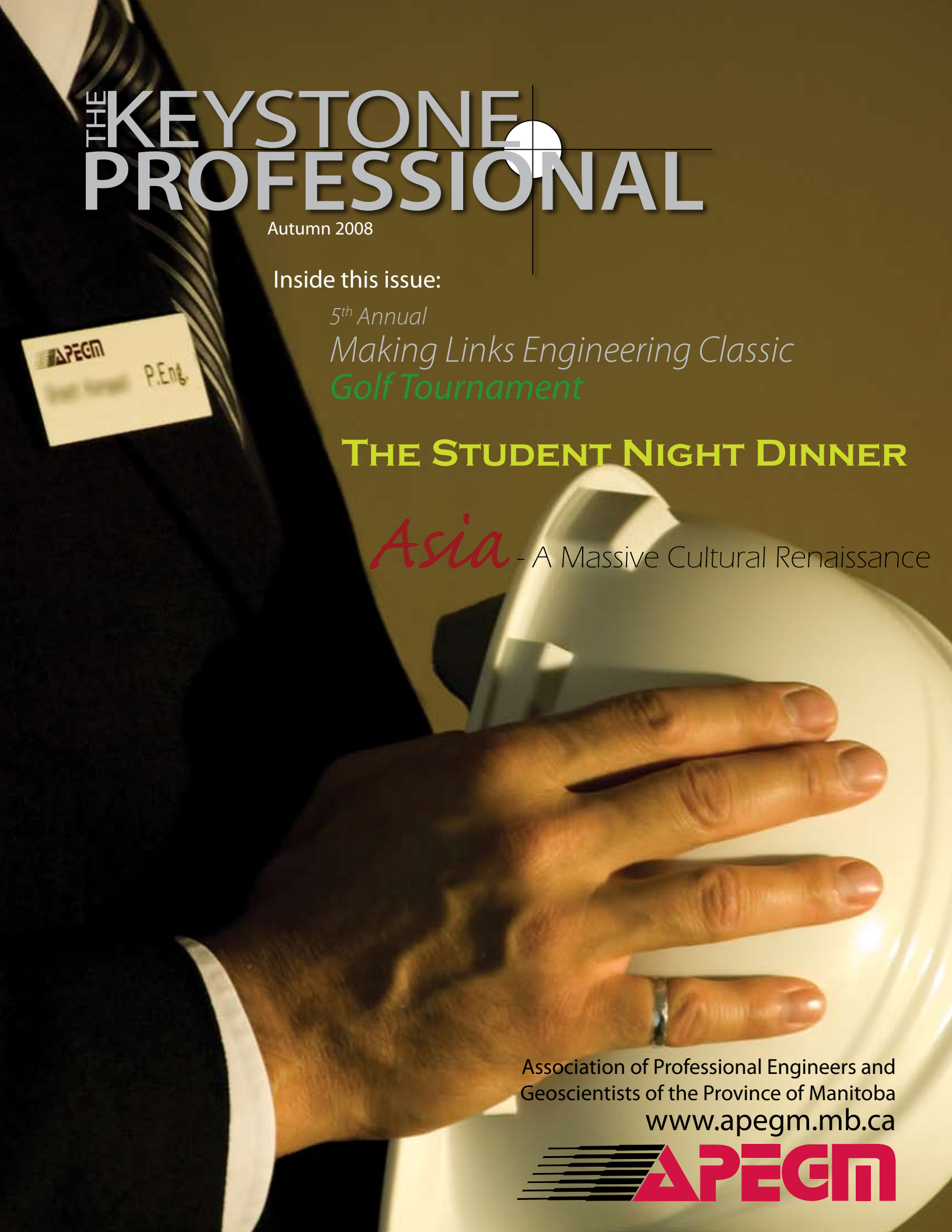

Association of Professional Engineers and
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THE KEYSTONE PROFESSIONAL

AUTUMN 2008

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The Communications Committee would like to hear from you. Comments can be forwarded to us by email: commfeedback@apegm.mb.ca. Members are also encouraged to submit articles and photos on topics that would be of interest to the membership.

Front cover photo 'Icons of the Profession' by Leif Anderson.
Leif Anderson is an amateur photographer in Winnipeg, MB, who is slowly being pulled into the world of professional phtography. He has been strongly involved in the hobby for eight years and is captivated by the depth of the craft.

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Tim Corkery, P.Geo.
President's Message

End of Another Chapter

In this note, my final comments as President before Don Himbeault, P.Eng., takes over, I thought I would like to pause and try to take stock of my time as your President. It was suggested by others that I should provide a few sage comments and share some insight on the workings, needs, and issues, as I have seen them as your elected representative. But this summary was requested in August and I can't really see any reduced momentum for cogitation or ruminations!

So, as we close in on the end the summer the pace picks up with Executive Committee meetings, requests from Government committees, auditor's reports, etc. and we will now charge into autumn gearing up for a new round of meetings - Council, Engineers Canada, Canadian Council of Professional Geoscientists, and several annual general meetings.

So, I will break it down into a few parts I think have been noteworthy this year.

There are tasks that never end and underlying them is the Act: the Act that allows us the privilege, and attending duties, of self regulation. These core tasks are the constant work of the APEGM office and a cadre of volunteers on the committees keep the wheels turning and to some extent the Council.

One of these tasks is the registration of Engineers and Geoscientists. There is a constant flow of work that generally moves ahead with a lot of diligence and only minor tweaking. However, this year has seen some major input of time by past President Allan Silk and me, Council, and Grant Koropatnick and Sharon Sankar in the APEGM office.

We now have new guidelines in place for the Academic Review Committee, the Experience Review forms have be streamlined and made available on-line, and we are close to completing a revised Manual of Admissions. Personally, I was hoping to have the Manual completed before the end of my term; however, it is not quite ready for the September Council meeting. I have to publicly apologize to Allan Silk for not being available since May, but I have an excuse - an unexpectedly busy summer intervened.

As well as the daily duties, there is a constant line of one off events at APEGM. In the past year no small amount of time has gone into defining the need and tasks for a new position, a Professional Standards Officer. It requires work by APEGM staff, review by Council, and a myriad of fine details to initiate a new function in the office.

APEGM now has is a newly minted position with duties related to ensuring all those working in Manitoba as engineers and geoscientists are compliant with our Engineering and Geoscientific Professions Act. APEGM is not alone in scrutinizing our licensing of professionals; sister associations across the country set the bar high aiming for 100 percent compliance. Michael Gregoire, P.Eng. has taken up this position and by all I have heard he is very busy.

Mike, however, got to move into some pretty small digs! That leads me to another initiative that is not a run of the mill event. The APEGM office is moving; about 100 metres to the south. The new building going up on Pembina has really taken shape over the last few weeks and Grant and the staff are looking forward to moving in shortly after Christmas.

So watch for the office opening some new eye catching signage - from the discussions, dreaming, and looking at the plans, our new association home sounds pretty exciting.

The above are merely a few things that came to mind tonight. But the real treat for me this year has been the continuous flow of new experiences and never

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NOTICE

Notice to Members

Reports on the operations of APEGM will be published in the Annual Report issued October 3, 2008, following the meeting of Council on September 11, 2008.

The report will be available on the APEGM website, at the Annual General Meeting on October 24, 2008, or it can be obtained by contacting the Association office at apegm@apegm.mb.ca or telephoning (204) 474-2736.

Year-end reports from the APEGM committees will be available at the Annual General Meeting or on the APEGM website as of October 24, 2008.

Grant Koropatnick, P.Eng.,
Secretary

Engineering Philosophy 101

. . . looking back.

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

"If I have seen further it is by standing on the shoulders of Giants"
Isaac Newton in a letter to Robert Hooke, 5 February 1675

This fall marks the beginning of the second century of instruction in the Faculty of Engineering at the University of Manitoba. The centennial speeches and celebrations are over and tomorrow's challenges await.

Homecoming 2007 was a grand party. Hundreds of alumni from around the world came and shared their memories of time spent as students. None of the stories about the old days seemed to relate to technological advances, but rather they were about people (students and professors) and places ("Is this where the steam lab was?" and "What happened to the structures lab?"). Class pictures triggered many memories.

As the weekend progressed, classmates began to "catch up" on a more personal level. Those discussions represent mini-histories of components of the engineering profession, but they are oral histories, for the most part unrecorded for future generations.

Most of those present have contributed in some way to changes in "the way Engineering is done". While visiting labs and seeing today's equipment, and in some cases yesterday's equipment, discussions often focused on developments since graduation and often about the ways in which individuals had been involved. Again, it was oral history that only those present were privileged to share.

> "Churchill once cautioned us on the dangers of ignoring history."

Special occasions like Centennial Celebrations or a new millennium tend to cause us to reflect. From 1999 to 2001 "everyone", including we engineers, assembled "lists" of accomplishments of the previous century. The lists were extensive, and controversial, but the interest seems to have waned.

Most of us can understand what motivated Newton's ". . . shoulders of Giants" comment cited above. On the other hand, few of us have bothered to study those "Giants" and the technical world they lived in. Most of us will recognize names like Currie or Banting but draw a blank with the mention of Brunel or John Hopps. By and large, we engineers are uninformed with respect to the history of our profession.

Obviously engineering is about finding solutions to current problems. We use the latest tools and theories along with necessary assumptions and approximations in our everyday work. But those tools and theories are based on old assumptions and approximations, most of which are lost in time. And today's assumptions and approximations are typically founded on what has "worked" in the past. Occasionally that "straight line relationship" can go exponential.

The failure of the I35 Bridge in Minneapolis last year, and featured in the Summer 2008 issue of the Keystone Professional, was an excellent illustration of the need for an understanding of engineering history. The bridge was designed about the time I was graduating from the University of Saskatchewan. It was designed to standards developed around slide rule calculations, for a pre "fatigue stress" world to carry loads defined by projected traffic patterns. It was modified and "upgraded" as the traffic changed in both magnitude and volume. But the post failure analysis was done considering modern "knowledge" and the original design was declared to be "inadequate".

Based on current approaches to analysis and design and current load demands, the gussets on the joints of the trusses were found to be "too thin". But if the design history had been considered as a part of the "upgrade" process, those "inadequacies" would probably have been found long ago because of our improved understanding of materials and our analysis capabilities.

Debates over the cause of the I35 bridge failure will continue for years. The point is, there was lots of time to find the "error" in gusset thickness (if it was an "error") long before the bridge collapsed.

Churchill once cautioned us on the dangers of ignoring history. Here in Manitoba there are signs that our profession may be starting to listen. APEGM has recently established a Heritage Committee and the Faculty of Engineering is working on a book that records our first 100 years. These are small steps, but important ones as we look back on where we "came from".

History, both technical and social, forms the foundation of our profession. And most engineers understand the need for a solid foundation. ■

Grant Koropatnick, P.Eng.
Executive Director's Message

Icons of the Profession

As your executive director, I get involved in a wide variety of discussions about the profession. One topic that seems to come up over and over again is the lack of recognition for what our profession contributes to society: the old complaint that we are not a visible profession.

Some say "we're the profession hidden in plain view!" Of course, it is not hard to see that doctors, lawyers and accountants are perhaps more visible in our society because they help us with our health, legal troubles, and taxes! Generally, the public does not deal directly with an engineer unless they have a cracked house foundation, flooding problem, or other specialized technical problem.

WHAT GETS NOTICED?

It's not fair, but engineers get noticed when something goes wrong. Bridge failures, bad water, power outages, and potholes in pavement get noticed by the public. Often the public asks, "What are the engineers doing about this". They seldom say, "Thank you, we appreciate the wireless communications, pure water supply, Winnipeg floodway, failsafe power grid, secure food supply, cool air-conditioning, and reliable heating".

Inside the profession, we know that our society would be backward and primitive if it weren't for the application of engineering principles toward the solution of daily problems. Throughout the last 90 years, engineers (and geoscientists) have served the public of Manitoba and built a modern, technically advanced society with all the comforts and conveniences.

In an attempt to promote the professions and increase public appreciation, let me tell you about three icons that I have been using whenever I speak to non-engineering audiences. It is my experience that people recognize these icons and generally associate them with engineers: the iron ring, a white hard hat, and the P.Eng. designation.

THE IRON RING

I have been at dinner parties, grocery stores, and school band concerts where people have commented ". . . oh, you're an engineer" because of my iron ring. Not all engineers wear an iron ring, but many do (especially those graduating from Canadian engineering schools). This is a visible icon of the profession that has existed since 1922 and has spread to the USA. It also should be mentioned that the Earth Ring was imported to Manitoba by the geoscientists this year 2008! These rings are visible icons of our professions.

THE WHITE HARD HAT

The white hard hat is a recognizable icon on construction sites. Whenever I drive by a site and see a group of suits standing around in white hard hats, I know the engineers are on site. Other hard hat colours are worn by the skilled trades and general labourers; you'll see yellow, blue, green, and red. The white hard hat defines "the boss." In many cases, the white hard hats are worn by the project engineer and no one else. The white hard hat is a recognizable icon. We give away hundreds of little spongy white hard hats to groups and conferences as a way of getting our name out there. *(Note: your community group, service club, or upcoming conference can request these de-stress items from Events & Communications Coordinator Angela Moore)*

THE P.ENG. & P.GEO.

Finally, the legally defined designations of "P.Eng." and "P.Geo." are recognizable icons that appear on the business cards and stationery of APEGM members. I am proud to write my signature with "P.Eng." behind my name. This right is exclusive to members and the public can be confident that when they see this symbol they can expect a high standard of technical competency and professional ethics from the member. I plan to use these initials more often in promotional brochures, slide presentations, and public speeches to ensure that they are well known and widely recognized by the public.

SO WHAT CAN YOU DO?

So what can you do to assist in raising awareness about our professions? Firstly, let's all stop whining about our lack of recognition by the public. GET OVER IT. Nobody likes a whiner. Secondly, by wearing your iron ring proudly and quietly telling anyone who asks what the icon means. Thirdly, participate on boards and committees at work, in your profession, in your community, and tell

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Volunteering and its benefits

R. Minhaz, EIT

A volunteer is someone who works for the community and does not get paid or receive compensation for services rendered other than reimbursement for out-of-pocket expenses.

Statistics from the "Canadian Centre for Philanthropy" show that Canadians with higher levels of formal education are more likely to volunteer than were those with lower levels, topped by university graduates followed by post-secondary education.

This survey also shows that Canadians who were in the earliest stages of adult life (15 to 24) or in middle to late middle age (35 to 64) were more likely to volunteer than were those in other life stages. The top three reasons why people volunteer are: belief in the cause supported by the organization; a desire to use their skills and experiences; and being personally affected or knowing someone who has been personally affected by the cause.

According to the statistics by the "Canadian Centre for Philanthropy," engineers (university graduates) will be more likely to volunteer; but there are no statistics available to know the participation rate of community involvement of people with engineering degree in Manitoba.

As volunteers, engineers can bring their unique blend of expertise, talent, drive, and commitment to a different aspect of community building and can develop soft skills in meeting management, budgeting, operational planning, and communication. Therefore, volunteering and communal engagement are very important for both society and engineers.

APEGM is the association for engineers in Manitoba and we engineers are grateful to them whose voluntary dedication helps it to function since its establishment. Participation of energetic and dynamic people in council and different committees can make APEGM a dynamic and vibrant organization.

We have to involve ourselves to make APEGM a great organization for our own interest. Who will lead APEGM towards modernity if we refuse to take the leadership baton?

How can we make young professionals become good citizens capable of leading our society if we do not encourage them to get involved in different organizations, including APEGM? How can we integrate the foreign-educated creative mind so it will thrive in our society if we do not encourage it to use untapped brain power?

The communication committee is put in a difficult position when it has to struggle to have enough articles to go to print for the *Keystone Professional*, keeping in mind that we have over five thousand members. We five thousand plus engineering or geoscience professionals are like family members under the same umbrella.

The *Keystone Professional* provides us with that rare opportunity to reach out to every single professional engineer to share our stories, experiences, knowledge, and opinions with one another. Unfortunately, our unwillingness to do so is isolating us from each other.

Engineering is a very broad field of expertise and we need a way to reach out to the smartest kids of our community and encourage them to become an engineer to build our nation. How is that possible if the PEGW committee struggles to find enough volunteers to make those events occur?

If someone does not volunteer for the registration or experience review committees, do we understand what will be the consequences? Even our salary sometimes depends on the statistics reported by the salary survey committee. Therefore, whether we like or dislike APEGM, it plays a significant role in our professional life in Manitoba. And the only way we can get the best out of APEGM is by making it a strong organization through our involvement.

The world is more interconnected now than ever before and if anything happens in any corner of the world, it affects everyone's life. Therefore local problems are not local any more and we engineers have to think globally to find solutions for problems ranging from poverty to energy problem; from food crisis to climate change.

Therefore we have to engage ourselves globally as well as locally. We have to learn from ancient civilizations as well as from young countries how to engage each other. This will help us become a great society. Accepting new ideas,

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

Thoughts On Design

Finding Something I Wasn't Looking For

Last summer I participated in a workshop relating to the use of technology in teaching. My intent had been to take the opportunity to focus on new ways to use technology in a class that I knew needed my attention. I wanted to "park" the broader academic and administrative issues that seem to be the centre of my attention lately. It didn't work quite like I had hoped.

Much to my surprise the workshop started out with presentations on learning theory, not technology. I have been teaching for some time now and, judging from student reaction, I have had a reasonable level of success in the process. My hope was that the workshop would provide enough technical training to help me avoid the embarrassment of having to get student help when I try to use one of these "toys" in the classroom. I was, initially, resistant to this "diversion".

The instructors were experts in the field of electronics applied to learning, but they began from the broader, application-independent base of fundamental theory. They acknowledged that learning can have a lot of different goals, and depending on the specifics, the process, and the tools one uses, will change.

Presentations quickly focused on course objectives and the various learning "domains" that needed to be taken into account. We found ourselves in discussions of cognitive, affective, and meta-cognitive learning domains. Translated roughly, the cognitive realm relates to "how do I do it?", the affective to "how to I know it?" and the meta-cognitive to "how do I know what I know?". I had come in anticipating training on the use of electronic technology but they forced me to think beyond that restricted scope.

Each participant had been asked to bring an outline for a course they teach. When I looked at the outline for my course in the light of the learning theories that had been presented, I found that most of my objectives were in the affective domain.

In other words, I had to admit that what I was trying to get the students to understand was how to approach and evaluate problems, not how to solve them. I wanted the students to gain experience working in design teams, arriving at consensus decisions, planning how to reach solutions, and keeping records of the process.

I found the liberal use of words like "understand", "appreciate", "experience", and "use". When the instructors asked me how I would examine the students to determine if they had met the course objectives, I realized there was a total disconnect. My exams tested knowledge of engineering jargon and specific "examples" used to illustrate course "objectives". I was trying to teach in one domain and examine in another.

The teaching problems I identified are pertinent to my class and need to be addressed before classes start in the fall. However, as I thought about the disconnect in my course and the application of the teaching/learning theories we were being exposed to, I began to see parallels in the world of design, both definition and practice.

My wife tells me that I find parallels to design in everything. She is probably right, but I must admit this time it came as a surprise to me.

I had come into the workshop looking for specific technical training. I had assumed that I knew how to deliver an engineering course and all I wanted was a better understanding of how the new "tools" worked so I could insert those tools into my course. My focus was on technology. The instructors' focus was on teaching using technology. They took the position that you should not look at technology in isolation.

So, how do I see this relating to design?

When I think of design, I see it as encompassing the range of skills and understanding required to move from problem to solution. Not all of these skills are technical. Many are "soft" skills that relate to fitting into a world populated by people with different points of view. In that sense, my view of design is a close parallel to the workshop instructors' view of teaching using technology. I see a process founded on some fundamental principles, but using all sorts of inputs, not just technology.

At the university, many "design" courses, including some I have taught, focus on developing competence within a specific technology. Basic objectives in these courses are to make certain that the students develop competencies in selecting "pieces". The vision is that the graduates will be able to apply their skills in a manner that will result in safe, workable end products. Courses are delivered, and received, with a singular view, much like my expectation for the workshop. They are "design" courses,

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The APEGM Office is Moving

For the last 12 years, the APEGM office has been located at 850A Pembina Highway. That will change this winter when APEGM moves into its new offices – currently under construction at 870 Pembina Highway.

When the Association office moved into the 3695 sq. foot location at 850A Pembina in 1996, the association (APEM at the time) had 3554 registered members who were served by an office staff of six.

Today, APEGM with 4570 registered members, 795 members-in-training and 224 assessment candidates, is served by an office staff of eleven. To accommodate this growth in staff, the APEGM office has had to sacrifice one of its meeting rooms (converted into staff offices), and squeeze staff into areas not designed to accommodate them.

In the new location, APEGM will occupy the entire first floor of the building – an area of 7194 sq. feet. This will provide adequate space to accommodate the current APEGM staff, and allow for future staff growth over the life of the new space lease. In addition, the new premises will have over 1400 sq. feet of meeting space – a large collaboration area of over 1000 sq. feet, which may be split into two separate areas; and, a dedicated meeting room able to accommodate meetings of 10 to 15 people.

The new building will also house a Heritage Display area, featuring a history of engineering and geoscience in Manitoba. This display area, in conjunction with the main collaboration area, will provide APEGM with the opportunity to host member and guest events of up to 100 people. This new location will provide the APEGM office with many improvements and benefits while still offering members and visitors adequate free parking.

The association staff looks forward to greeting and hosting the APEGM membership in our new location in the near future.

Artist description of the new location

continued from page 3, President's Message

dreamt of tasks. It has been both an exciting and rewarding year for me. As the first Geoscientist President you will have to ask Grant if I did well.

In closing, it is amazing how fast a year can spin by, at (most) times apparently out of my control. But Grant and the office staff keep the underlying system running smoothly for us. For that, we owe them a huge vote of thanks. As well, as I said last issue - the Association relies on dedication of volunteers. It always seems to return to the need for volunteers. So keep on giving a little bit back. It is your profession. ■

continued from page 5, Executive Directors Message

them what you do. "I am an engineer and this is what I do." There is no better way to prove to colleagues, neighbours and the general public that you are a credible person, than to sit at the table and say you're an engineer with enthusiasm. Your energy and ideas will create positive public profile. We need everyone to speak up in a positive way in order for the public to recognize what we do.

NEW OFFICE – NEW VISIBILITY!

Have you seen the new building going up at 870 Pembina Highway, across the parking lot from the College of Registered Nurses? That's our NEW OFFICE. We anticipate moving into the building in January 2009. This new location will enhance our public visibility with a "store front" facing the high traffic Pembina-Harrow intersection. Also, we will occupy more space with new multi-use meeting rooms, a venue for hosting events. and heritage-themed waiting area. Watch for an announcement about the upcoming ribbon-cutting ceremony and reception to officially open the new APEGM office.

In the meantime, your feedback is welcomed. If you have any thoughts on anything you read in the Keystone Professional, please email me at apegm@apegm.mb.ca or message me through Facebook. ■

Chantal Guay, P.Eng., M.Env.
Engineers Canada
CEO Message

Working Together Towards Common Goals

Engineers Canada's 2008 annual general meeting has come and gone. From May 21 to 24 we convened with our constituent members, partners, sponsors and award recipients in the historical city of Québec. Being my first annual meeting as Engineers Canada's chief executive officer, I can tell you that it was both an intense and extremely enjoyable experience.

It was impressive to witness the remarkable collaboration between our constituent members, as well as between their presidents. The executive directors, presidents and board members exchanged and discussed similar concerns and issues, which demonstrated to me that Engineers Canada and its members are in a healthy state of cooperation. It exemplified that we can all come together to generate positive debate and come up with effective methods to solve issues of local and national importance. Over the coming months I will be reporting on the status of various activities approved and discussed during the 2008 annual meeting via these CEO messages. However, I want to take this opportunity to highlight a couple of initiatives that generated much constructive discussion.

It is clear that we are moving together towards common goals as the Board of Directors reiterated their unanimous support for, months after creating the Engineers Canada Task Force to leverage opportunities stemming from our business name change, raising the profile of the engineering profession. It was also clear that the national promotional campaign currently being developed needs to be a long-term, sustainable effort. While we recognize the need to address the funding process of such a resource intensive and long-term initiative, the first phase of the project is on target and is moving forward at a steady pace. A detailed overview of the campaign will be presented to Engineers Canada's Board of Directors during their October meeting.

The annual meetings allow us to chart our collective course, and, as Canadian society is constantly evolving, it is imperative that the engineering profession finds new ways to respond to societal trends. The 2009 national engineering summit, Leading a Canadian Future: The New Engineer in Society, will be an excellent venue for the engineering profession to affect positive change. I am deeply committed to this exciting initiative as we work on its development with our constituent members and various partners, and I thank the Board of Directors for their input during our May meeting. Our Board will also be provided with a summit progress report in October.

The annual meeting culminated with the Engineers Canada Awards gala. It was an honour to emcee the event, and to learn more about the excellent work of each award recipient. It was a humbling experience to meet the recipients, who are incredible both as engineers and as people. I am proud that we have such great individuals within our profession, and the experience further convinced me that we need to continue to support the work of our peers. I thank all of the constituent members who nominated candidates to receive awards, and I look forward to another successful gala in 2009.

I also thank Engineers Canada staff, who made the 2008 annual general meeting such a great success, and the staff at the Ordre des ingénieurs du Québec for their help in planning the event and the entertaining fun night. I am eager to act on the decisions made at the annual meeting and to continue working with everyone over the year to come. ■

Professional Development & Networking Events

Highlights From the 2008 CCWESTT Conference

L.M.K. Melvin, P.Eng.

May 29 - 31, 2008

Three APEGM members, Kristina Anderson, Neemee Aquino, and Lindsay Melvin, attended the 12th CCWESTT Conference held May 29 - 31, 2008 in Guelph, Ontario. CCWESTT is the Canadian Coalition of Women in Engineering, Science, Trades and Technology.

The conference, entitled "Building on Success", provided a fulfilling program of workshops, paper presentations, panel discussions, as well as opportunities to network with the academic, science, technology, trades, and engineering communities from across Canada.

"Building on Success" focused on highlighting the successes of various challenges facing these professions. Paper presentations provided insight into recruitment initiatives and outreach programs across Canada as well as the ongoing research in Canada related to retaining girls in science, professional development, and graduate studies. Manitoba's own Dr. Sandra Ingram, from the University of Manitoba presented the paper "A Proposed National Study on the Role of Mentorship in Enhancing the Career Paths of Canadian Engineers", written by Sue Bruning, Sandra Ingram & Irene Mikawoz.

The conference also allowed participants to take some time for self guidance through the various professional development workshops. For example, the "Building Effective and Lasting Business Relationships" workshop introduced participants to the "Insights Discovery System", where we learned what colour energy best describes us. By knowing our own colour, and identifying the colour of those we interact with, working relationships and communication can improve. Workshop participants also experienced various colours by participating in role playing scenarios. Similarly, the workshop, "The Essentials of Clear, Engaging, and Energized Presentations" gave every participant the opportunity to make a presentation and receive constructive feedback.

The three Keynote Speakers, all excellent role models, provided insights to their industries, and career experiences. Firstly, Dr. Suzanne Fortier, President of the Natural Sciences and Engineering Research Council of Canada (NSERC), presented statistics relating to NSERC awards and programs. The insights into the awards, reminds us of the importance of recognizing our peers for their accomplishments, as well as to encourage women to take on leadership roles. If you know a colleague who deserves recognition, consider nominating them for an award. Dr. Fortier also left us with an important piece of advice: We don't always choose our high heeled shoes. In other words, we do not always get to choose our challenges, but we must work through each challenge regardless.

Mary Lawson, Vice President & General Manager of Dalerose Home, had an

CCWESTT 2008 Banquet

Back L to R: Sandra Ingram (University of Manitoba, Faculty of Engineering), Neemee Aquino, Kristina Anderson, Lindsay Melvin (APEGM Members)

Front L to R: Isidore LeBlond (Canadian Council of Technicians and Technologists, CCTT), Nathalie Emond (Red River College), Lois Sterner (CCTT), Tracey Kucheravy (CTTAM)

interesting story to share. Every training and experience prepares you for the next. Her broad experiences include beginnings as a renovator/builder in Kitchener/Waterloo and led to corporate roles in Calgary and Toronto as well as an understanding of the government's role in the housing market through her role as President of the Canadian Home Builders Association (2004).

Anne Sado, President of George Brown College, reminded us of the importance of people and relationships for "Building on Success".

Overall the conference was a unique opportunity to focus on success and growth in our profession, and to meet those of the wider profession. The opportunity to continue "Building on Success" is a privilege we should exercise. Our successes should be shared and acknowledged.

If you are ever looking for a unique professional development opportunity, the CCWESTT Conference is held every two years. For more information check out the CCWESTT website at www.ccwestt.org. ■

APEGM Connection to CCWESTT

K. Anderson, P.Geo.

Did you know that the Association of Professional Engineers and Geoscientists of Manitoba Women's Action Committee is a member of the Canadian Coalition of Women in Engineering, Science, Technology, and Trades? If not, you are probably asking: what is the Canadian Coalition of Women in Engineering, Science, Trades, and Technology (CCWESTT)?

Like any coalition, CCWESTT is an ever-evolving nebulous entity. As such, the most straightforward way to answer this question is probably to start with the coalition's origins and work chronologically forward to the present.

The predecessor of the Canadian Coalition of Women in Engineering, Science, Trades, and Technology was the Canadian Conference of Women in Engineering, Science, and Technology which was established in 1987. This organization held five, bi-annual, national conferences hosted by local chapters of Women in Science and Engineering (WISE) and the Canadian Association of Women in Science (CAWIS).

Following the fifth conference, which was held in Toronto in 1992, the momentum built to establish a coalition of member organizations with a mandate beyond hosting the national, biannual conference. The Canadian Coalition of Women in Engineering, Science, and Technology (CCWEST) was born. The second "T", representing the trades, wasn't added until approximately 2005.

In 1992, CCWEST consisted of six member organizations with representation from British Columbia, Alberta, Manitoba, and Ontario. The initial member organizations were as follows: Association for Women Geoscientists (AWG), Alberta Women's Science Network (AWES), Canadian Association for Women in Science (CAWIS), Division for the Advancement of Women in Engineering and Geoscience (DAWEG), Society for Canadian Women in Science and Technology (SCWIST), Women in Science and Engineering (WISE), and Women Inventors Project (WIP).

In 2008, CCWESTT consists of twenty-five member organizations with representation from British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Nova Scotia, and Newfoundland, as well as New Brunswick informally. The current member organizations are too many to list here but are listed on the website, www.ccwestt.org, for anyone curious enough to follow up on this article.

The current mandate of CCWESTT is to [1] develop and maintain a resource and support network to facilitate the exchange of information amongst member organizations; [2] promote and advocate for the full participation of women in science, engineering, trades, and technology in government, business, industry, and education; and [3] research, measure, evaluate, and disseminate information on the integration of women in science, engineering, trades and technology at all levels.

The major initiative of CCWESTT today is the WinSETT project. The WinSETT project is essentially the proposed development of a Canadian Centre for the Advancement of Women in Science, Engineering, Trades, and Technology. Meetings with industry, post-secondary institutions, sector organizations and associations, and governments have generated endorsements and statements of support from the aforementioned stakeholders. Funding proposals are being drafted for obtaining the resources to complete the centre business plan and begin implementation of its establishment.

It is a credit to the many volunteer hours dedicated by many Canadian women that CCWESTT has grown to its current size and capacity. ■

From left to right - Kristina Anderson (APEGM WAC / CCWESTT), Neemee Aquino (APEGM WAC Vice President), Judy Myers (CCWESTT 2007/08 President), Nan Armour (CCWESTT 2008/09 President), Lindsay Melvin (APEGM WAC President)

Meet APEGM Professional Standards Officer:

Michael Gregoire, P.Eng.

Communications Committee: Welcome to APEGM Mike! Tell the members a little about yourself.

Michael Gregoire: Before joining APEGM, I worked in the consulting engineering field. My most recent position was with Crosier Kilgour and Partners, working on building renovation projects. Prior to that, I was with FWS Construction performing structural design of steel structures for design-build projects.

In my leisure time, I enjoy going to swimming lessons and Kindermusik with my wife, Kiri, and my son, Finn. I also enjoy playing soccer and volleyball, and the occasional chess game.

Also, if you see one of those 'crazy' cyclists commuting down Pembina Highway, please don't hit him, because it may be me.

CC: What do you think will be the greatest challenge facing our membership with respect to professional standards in the next 5 to 10 years?

MG: Through informal polling, it appears that appreciation of the inherent value of being a member of APEGM could be improved. Achieving a higher level of appreciation for APEGM may not have a direct impact on professional standards but serves as a starting point from which all of the members will improve the profession as a whole. If all engineers had a greater appreciation of the rights and duties of belonging to a self-regulated profession, it would increase participation, encourage continuing professional development, and maintain the standard to which we all strive to meet. What makes this goal challenging is that it is intangible in nature.

CC: Should every APEGM Member feel free to identify to you those companies which seem to be doing engineering work with non-Registered staff?

MG: Enforcement of the Engineering and Geoscientific Professions Act is definitely one of the roles of APEGM that I will be helping to maintain and I do encourage everyone to contact me with any questionable activity. In fact, according to the Code of Ethics, it is the duty of each member to report such activities:

4. Each practitioner shall uphold and enhance the honour, integrity and dignity of the engineering and geoscientific professions.

Specifically, and without limiting the generality of this statement, each practitioner shall:

4.4 present appropriate information to the Registrar of the Association if a professional colleague, or any other person or entity, is believed to be in violation of the Act, the By-laws or this Code of Ethics;

CC: What should an EIT do when hired by a company that has no mentor/engineer/supervisor/coworker?

MG: This is an unenviable situation for any MIT and is unfortunately more common in certain fields of practice. Mentorship is such an important aspect of a professional's career, even after registration with APEGM. As such, it is important for someone in this position to harvest a relationship with a registered member who can act as their mentor.

According to the Act, all engineering / geoscientific work must be directly supervised by a professional engineer / geoscientist. Since this supervision must come from outside the organization employing the MIT, it is ideal if the company supports the relationship between the MIT and their mentor. This leads back to the challenge described in the question above regarding the importance of improving appreciation for APEGM, not only by members, but by employers, as well.

CC: How do you ensure that all members are meeting professional standards?

MG: Interaction.

One of the duties of being a professional is to be aware of your capabilities and limitations. It is up to each member of APEGM to determine whether or not the work they are producing is of an acceptable level. This can only be achieved by interacting with your peers. One of APEGM's roles is to facilitate this interaction.

As a regulating body, APEGM cannot inspect each and every engineering and geoscientific endeavour. We therefore rely on the public, including our members, to voice concerns regarding any questionable practice that is undertaken. In order for this reporting to occur successfully, APEGM must be constantly interacting with the public to ensure that our role is known.

Voluntary declaration by each member that they are maintaining a sufficient standard of practice is the current continued competency assurance program in Manitoba. Five of the other Canadian engineering associations require reporting of continuing professional development and three of the other associations provide for voluntary reporting. In other professional fields, more stringent competency assurance programs have been legislated, including required peer-review of practice. It will be increasingly difficult to defend the current continued competency assurance program in Manitoba given developments in other jurisdictions and other professions.

CC: In the IT field, it is common to find people representing themselves as CISCO Certified Engineers or Microsoft Certified Engineers. What process is in place to deal with this use of the term Engineer?

MG: The Engineering and Geoscientific Professions Act restricts use of the engineering title to members of APEGM. The only exceptions made in this regard are for power engineers and locomotive engineers. A person that is found guilty of illegally using the term engineer can face a fine of up to $10,000.00 for the first offence and $20,000.00 for a second offence.

Interestingly, Microsoft entered into consultation with Engineers Canada and the provincial associations regarding the title of Microsoft Certified Engineers. Based on these consultations, in 2001 Microsoft instructed holders of an MSCE certificate to not use the title engineer. The following year, Microsoft then retracted its position and encouraged people with an MSCE certificate to use the full title of Certified Engineer. Later, the engineering regulator in Quebec (Ordre des Ingenieurs du Quebec

– OIQ) successfully prosecuted Microsoft in both the Provincial Court and Appeal Court and have achieved the legal precedent for all other Canadian jurisdictions. Microsoft can no longer use the word "engineer" in their certificate programs in Canada.

CC: Thanks for taking the time to answer some of our questions regarding Professional Standards and the position at APEGM. We wish you all the best in this new role. ■

Will the Real Engineer Please Step Forward?

Chris McNeil, P.Eng.

As a P.Eng working in the IT field I see a lot of confusion with the use of the term Engineer. Many people in the IT field claim that they are engineers and use such titles as Microsoft Certified Systems Engineer, Certified Novell Engineer, etc. Colleagues with technical school diplomas tell me they are engineers.

There seems to be confusion surrounding the term engineer and who is allowed to use it. I have even heard Professional Engineers state that as long as you don't use the word Professional in front of the term then it is permissible. According to the Engineering Act this is simply not the case.

"The Engineering and Geoscientific Professions Act" of Manitoba section 58(1) clearly states:

Except as otherwise provided in this Act, no person who is not a member or a temporary licensee shall use, orally or otherwise, any of the following titles:

(a) professional engineer;

(b) engineer;

(c) consulting engineer;

(d) professional geoscientist;

(e) geoscientist;

(f) consulting geoscientist;

Even other professional organizations seem to claim the right to designate members as engineers. The Canadian Information Processing Society (CIPS) states this in the minutes from their National Board of Director's Meeting 2004.

CIPS strongly supports software professionals' right to use the term "engineer" as part of job titles that are in common international use, as in "software engineer," "system engineer," "data engineer," etc., provided they have recognized professional qualifications appropriate for the use of that title. CIPS reserves the right to decide whether an individual's recognized professional qualifications justifies use of their title.

The confusion over the term Engineer has consequences not just to those who are Professional Engineers (P.Eng.) but also to businesses who hire professionals. The term Engineer is widely held in esteem as a guarantee that the holder has the education, experience, and skills required to do the job.

Others co-opting the term receive the positive aspects of the term without any of the legal responsibility that come with it. APEGM can help eliminate this confusion by ensuring that the term engineer is only used as specified in the "The Engineering and Geoscientific Professions Act" of Manitoba. ■

Council Reports

Thursday, June 19, 2008

A. Erhardt, EIT

The June Council meeting was called to order just before 1:00 p.m. following the establishment of quorum and a round of introductions. The proposed agenda was accepted and Council proceeded with the topics for the meeting.

Changes to registration policy was the first item for discussion. Director of Admissions Sharon Sankar provided some information to bring Council up to date on the policy changes and their effect since the changes were implemented May 9, 2008. Some applicants received changes to their academic assessments under the new policy while others had no change in their file. Overall, the implementation was going smoothly.

During the implementation of the new policy, some members serving on the Academic Review Committee (ARC) wanted clarification. One member sent a list of questions. The questions were reviewed by Council and following a discussion, Council agreed that the changes are in place and are for the best. It was noted that the changes actually refer back to guidelines from Engineers Canada. Council is confident that the changes will bring APEGM inline with practices being followed in other Canadian jurisdictions.

To conclude the item, a motion was approved that President Corkery with two councillors would attend the next ARC meeting to answer any additional questions or concerns that the ARC might have.

The next topic for discussion centered on the teaching of engineering and whether it counts as the practice of engineering. Unlike some other associations, there is no reference within our Act that states that teaching engineering is the practice of engineering.

One councillor commented that given the recent policy changes, this issue may no longer be in question. Previously, for example, an engineering professor who teaches a particular course would possibly be required to write an exam on the very topic s/he teaches. Councillor Woods suggested that a change to the Act may be required to solve this particular dilemma. However, Past President Digvir Jayas noted that for a professor, a portion of their time is dedicated to teaching, but an equal and sometimes greater percentage is committed to research and design and it is this research and design that is definitely the practice of engineering.

As a result of the discussion, the original motion was modified so that the Manual of Admissions would contain the following: "the teaching of engineering subjects which include significant engineering science and engineering design content is considered to be the practice of engineering". This is consistent with the guideline from Engineers Canada. A second similar motion was made to also cover the teaching of geoscience.

The next item on the agenda was a discussion regarding the MOU from the APEGM Foundation. Councillor Don Himbeault provided some background information about the relationship between APEGM and the APEGM Foundation. The Foundation would approach Council with a "wish list", and Council would approve the allocations of funds. A representative from Council would also attend Foundation meetings. In the end, a motion was brought forward that pending legal Council review, Council approve the MOU between APEGM and the APEGM Foundation Inc.

Next was the question of whether or not APEGM Council meeting minutes should be published and available online. The Professional Engineers of Ontario could be used as a model for the implementation for this if approved. As it stands, many other associations place their meeting minutes online, some to members only, and some to the general public. A debate over whether to make the minutes available to the general public or just members with the new website launch in November occurred. In the end, a motion was passed that effective with the approved June 19th meeting minutes, all approved Council minutes would be posted for the general public to view on the association's website.

As things began to near a close, the list of outstanding items was quickly reviewed. All of the outstanding projects were moving forward. The Council monitoring reports were also reviewed and approved. As well, an informational item regarding the importance of Engineers Canada was tabled. Following the Council self evaluation and requisite Dilbert Comic, the meeting was adjourned at 3:15 pm. ■

continued from page 7, Thoughts On Design

but they only represent a part, a very important part, of "design".

In the broader context, typical of the world off campus, "design" requires a more inclusive definition. On campus, most professors have experienced, and teach, "design" as it relates to the specific technology they have studied and developed. Both perspectives are valid within their own terms of reference. We simply need to recognize that there are specific terms of reference and quit debating over whose definition of "design" is correct.

And with that, I'll go back to work to "fix" my course before the students arrive back on campus this fall. ■

In Memoriam

The Association has received, with deep regret, notification of the death of the following members:

John Borger
Robert Smith

One of **three**

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5th Annual Making Links Engineering Classic Golf Tournament

P. Kochan, P.Eng.

Friends, colleagues, and family gathered on June 12, 2008 - one of the few beautiful days this summer - for the fifth annual Making Links Engineering Classic (MLEC). The tournament is organized every year by the APEGM Sports Committee, in association with the University of Manitoba. By all indicators, the event was a huge success. With an attendance of over 220 registered golfers, the tournament was sold out and $13,500 was donated to the Faculty of Engineering at the University of Manitoba in support of educating Manitoba's future engineers.

Though the skies opened after the golfing was finished, the golfers indulged in a tasty prime rib dinner in the safety of the marquee. In the formal program that followed dinner, guests heard addresses by Leo Martins of Great West Life's Group Retirement Services, and Dr. Doug Ruth, Dean of Engineering at the University of Manitoba. Grant Koropatnick, Executive Director and Registrar for APEGM brought greetings from the Association. Much appreciation was expressed for the significant donation to the University.

The 2008 Tournament featured several hole and competitions sponsors, including lunch sponsor, HudBay Minerals Inc. and golf cart sponsor, City Mix. The Chipping Contest and Par 3 Poker were sponsored by Lafarge Canada Inc. Hit a Ball for the MS Society raised over $700 for their charity. The other competitions included: Straightest Drive, sponsored by Stantec Consulting and North Garden Restaurant; Longest Drive, sponsored by Wardrop and Lavergne Draward & Associates Inc.; and Closest to the Pin sponsored by Cansel Survey Equipment, Ranger Insurance Brokers, and Eng-Tech Consulting Ltd.

APEGM Team: Mike Gregoire, Professional Standards Officer; Bill Girling, Councillor; Grant Koropatnick, Executive Director; Don Himbeault, President Elect

This year's tournament winners were Geoff Zywina, Brian Blahey, Dave McKibbin, and Howard Prochyshyn. The Landon Cup (2nd place) was awarded to the team of Dan Scherger, Gord Siebert, Scott Minty, and Pat Adams. The Sullivan Cup (3rd place) went to the team of Dana Bell, Don Lecuyer, Rob Colowel, and Chris Peck.

Presentation of the $13,500 donation to the U of M Faculty of Engineering

An astounding number of prizes were handed out. In addition to the tee gift – a cooler bag chair and other goodies – each player received a numbered prize in a random draw from a large selection of items, ranging from power tools to home accessorizing equipment.

The APEGM Sports Committee would like to thank all who came out to play and contribute to the Tournament. In so doing, you helped support the next generation of Manitoba Engineers. We are always looking for ways to improve the tournament and welcome any suggestions. See you all next year on June 18, 2009 – watch for more details. ■

Doug Ruth, Dean of Engineering, U of M, with the HudBay Minerals Inc .Team, 2008 MLEC Lunch Sponsors

4th Place Team: Lester Deane, Kelly Braden, Peter Washchychyshyn, Rob Borody

3rd Place Team: Dana Bell, Don Lecuyer, Rob Colowel, Chris Peck

2nd Place Team: Dan Scherger, Gord Siebert, Scott Minty, Pat Adams

1st Place Team: Geoff Zywina, Brian Blahey, Dave McKibbin, Howard Prochyshyn

This area is in recognition of those sho have endeavoured to support and fund the 2008 MLEC, without whom, we would not be able to bring you such an outstanding day of golf and networking.

Please support our Sponsors in turn, so they may continue to thrive and grow, and continue to finance this opportunity to support the future of Manitoba's Engineers at the University of Mantioba.

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The Student Night Dinner

F.E. Stock, P.Eng.

Starting from the "History of the Networking Dinner" by R. Minhaz, published in the Winter 2007 issue of The Keystone Professional, this is to add some of its earlier history.

Prior to, and during the 1960's, the function was known as "The Student Night Dinner", and was hosted annually by the Engineering Institute of Canada. Its purpose was to enable engineering students to meet a "real live Engineer", with whom they were encouraged to form friendships. The principle was that the Engineer would host the Student to the dinner, and then and afterwards be available to advise the Student on any matters on which the Student would request it.

In those days, the Engineering Institute of Canada was a "general" organization, with members specializing in each of Civil, Mechanical, and Electrical engineering all grouped into one organization, the EIC. We were careful to match the specialism of each student with that of the sponsoring engineer.

At each of the dinners, a distinguished Engineer would give a talk about a large project with which he was in some way responsible, and of which a student could be expected to be curious about. An example was an excellent talk given by Carson Templeton, of Templeton Engineering, on the Environmental Assessment of the Mackenzie River Pipeline.

That was how it was up to 1969. No one seemed to know when the EIC had started organizing, and its engineers hosting, the Student Night Dinner.

In Britain, engineering is organized on a national basis. That does the same job as the Provincial arrangement we have in Canada. There are three Institutions which each have a Royal Charter. These are the Institutions of Civil, of Mechanical, and of Electrical Engineers. The Royal Charters confer on them the authority to operate as learned societies, to regulate their branch of engineering, and to award qualifications to their graduates. All three of these Institutions have Branches in Canada.

In 1969, the President of The Institution of Mechanical Engineers visited Canada. He was concerned that the presence of these Branches, particularly that of his own, The Mechanical Engineers, would impede the development of learned engineering societies by Canada. He discussed this with the EIC. That led to the birth of the Canadian Society for Mechanical Engineers. The CSME was the first Constituent Society to be separated from the earlier general organization of the EIC. It was intended to absorb expatriate British and American mechanical engineers into a Canadian learned society.

During the following few years, the principle of dividing the EIC into constituent Societies developed. The EIC created the Canadian Society of Civil Engineers and Geoscientists. Similarly, the electrical engineers became the Canadian Society for Electrical Engineers. That completed the division of the Engineering Institute of Canada into three constituent Societies. All three of these constituent societies started groups in Winnipeg. The EIC continued in Winnipeg as an umbrella organization.

While these changes to the EIC were going on, we still continued with the Student Night Dinner. We did it in the beginning by assigning it in rotation to each of the three constituent Societies.

After several years, difficulties arose in the organization of the Constituent Societies. First, the Civil Engineers decided to detach their organization from the EIC. They became an independent society.

Then, as a result of intensive recruiting by the IEEE on the campus of the University of Manitoba, the membership of the Canadian Society for Electrical Engineers dwindled to the point at which they became unable to operate, so they ceased operations.

The Canadian Society of Mechanical Engineers found itself standing alone, and deprived of the support of the Electrical Engineers and the Civil Engineers which it had thereto enjoyed. It was the last of the EIC constituent Societies in Manitoba to shut down.

The students were enthusiastic about the Student Night Dinner, but, seeing this process of the disintegration of the EIC, we suggested to them that they should join with us to "learn the ropes". This they did, but the difficulty became the shortage of engineers to sponsor the students. This led us jointly to approach what became APEGM, who fortunately were very receptive to the idea.

The efforts of APEGM have led to the continuation of what was originally known as the Student Night Dinner, to the benefit of the Students, and of the Province. It was, and is, a most worthwhile enterprise. ■

Asia - A Massive Cultural Renaissance

R. Minhaz, EIT

There is an Arab proverb that says “He who speaks about the future lies even when he tells the truth”. Some wise soul said that if you want to predict the flood level in the Ganges River next summer, you can do so in theory if you can measure the amount of snow that has fallen on the Himalayas over the winter. Using the same analogy considering various events having already occurred, I am trying to draw a picture of the present and the near future of the world.

It is very clear that the Asian century will arrive; in fact it has already begun. The world will be extremely different from what it is today. These differences will be measurable in terms of where the centre of gravity of the world’s economy is going to be and where political decisions are going to be made. These locations are all going to shift.

In the 18th and 19th century they were located in Europe. In the 20th century, they moved across the Atlantic and hovered somewhere over the Atlantic, between Europe and North America. Now, the centre of gravity is clearly in North America. It is going to move progressively west to the Asia pacific region.

A very famous study done by the US investment bank Goldman Sachs, on the basis of very modest assumption, shows the four largest economies in the year 2050 will be first China, then USA, thirdly India, and finally Japan. Three out of the four largest economies of the world will be Asian.

A British historian, Angus Maddison, showed that up to the year 1820 (for the first 1800 years after Christ) the two largest economies in the world were consistently China and India.

So, in the 21st century, what we are returning to is not the exception but the norm. The question of course is why is it happening now? Why have China and India been languishing in various kinds of backwardness for the last 200 years? Why are they suddenly waking up now? Four factors can be associated with this recent revival.

The first and most important factor is the rebirth of cultural confidence in Asian societies. As an Asian, one subconsciously accepted the fact that you were somehow a second class being because you were a colonial subject. But somehow, over the last 60 years or so since the end of World War II, the consecutive successes of the Asian economies have generated a whole new mind set among roughly 3.5 billion minds in the world. Many of them no longer believe that they going to be second class citizens in the world tomorrow.

It began with Japan’s re-emergence after World War II. Eventually, most of the southern Asian countries began to wonder: “Why not us?”

The critical turn was made by China sometime around 1978/79. Many factors led Deng Xiaoping to turn the Chinese economy on a dime. China moved from central planning to a free-market style economy. One critical factor for this turn-around was Xiaoping’s awareness of how well the overseas Chinese were doing. This led him to ask the obvious question of why the Chinese overseas were smarter than the Chinese in China. As a result, China has been the fastest growing economy for almost 25 years. China having the fastest growing economy is like the fattest guy in the class winning the 100 meter race.

China’s surge forward woke up India, and made India aware that they had to change as well. In the 1990’s India was saying “Look at what China has done? If China can do it then why not us?” That is when Indians began to register that they have to change. Consequently, the Indian economy began to surge forward.

The economic statistics do not really capture the whole story. What is really important to understand is the change in mind set that has occurred in Asia. This change is very visible in many Asian scholars, especially Chinese and Indian. They are getting their education at universities like MIT, Stanford,

and Harvard. All their life they have dreamed of going to America, getting a green card and getting a job there. However, recently, more and more are deciding to return home.

The reason for this shift in thinking is that they see their home country as a land of opportunity. They see their home country is taking off and they want to be part of that growth. This is one of the most important factors in the Asian revival.

The second important factor in the Asian renewal is the continuous investment of Asian society in its youth and their education. The Asian society has come to understand that the only way they can catch up and dominate in the future is by providing quality education for its youth. The Asian students' dominance, especially at the graduate school level, across the world is the clear indication of that vision.

In the future, the Asian policy makers want to see their countries as centres of innovation and cutting age technology, instead of being a source of cheap labor and manufacturing hubs. In order to achieve their goals, they are encouraging the young generation to excel in math, science and engineering. Today it is remarkable to see that together, China and India are producing one million engineers every year. This is in sharp contrast to the 170,000 engineers coming out of Europe and North America combined.

The third important factor that fueled the rise of Asia is globalization. Globalization is a gift to Asia because it shrank the world in a very profound way and brought the world market to Asian countries. Today the fact that no matter where you travel in the world you find goods made in China, proves that China is taking full advantage of globalization.

The fourth reason why it is happening now is the arrival of a tidal wave of common sense in the Asian countries. That common sense is to achieve zero war among the nation states. The unity of Asia is much more clear especially by the re-establishment of old cultural links, which had been cut for the last 200 years.

The most exciting project is the "Nalanda Project" in Bihar, India. This project is now being supported by Singapore, Japan, India, China and several other countries and is the best example of old Asian cultural links coming together. Nalanda used to be the dominant place of learning for 700 years until it was completely destroyed by Turks in the 12th century. It is where scholars from all over the world, but especially from China, Korea, Japan, and South-East Asia are returning to study. This is one example of the kind of visionary new things popping up all over Asia. As a result Asia is experiencing a massive cultural renaissance.

The cultural confidence makes Indian film director Shekhar Kapur to say "I bet you in a few years "SPIDERMAN", which has made 6/7 million now, will make a billion dollars in it's first year and 700 million will come from Asia; and when the Spiderman takes his mask off it will be Chinese or Indian." This will happen not only because consumption is rising but also the cultures of China and India are getting confident. The Asian are expressing themselves, they are getting richer. Now India and China are creating their own brands. In the near future, 90% of the people in Facebook will be from Asia, 80% of everything that goes on to YouTube will be Asian and it will change the world from what it is now. An American film director will be interviewed and asked "How can you make American/Hollywood films international when Asian films are dominating the world?"

No Asian country wants to be anyone's trump card or containment against any other Asian countries. So instead, they are sharing their prosperity with each other by increasing trade. Today the fastest trade flow in the world is happening between China and its neighbours. All the countries are proposing free trade agreements with each other.

A competitive liberalization process is taking place partly for trading and economic reason, partly also for geo-political reasons which creates a new cycle of development. For example, China and Vietnam had been fighting for two thousand years and China actually occupied Vietnam for a thousand years. But today if you go to the Sino-Vietnamese border, you will be amazed of the extent of the transformation, full of trade instead of smuggling. Vietnam is emerging as a new economic tiger and has the potential to develop as Korea and Japan have.

China and India have a major psychological impact in modernizing Islamic world. Roughly 1.3 billion Muslims see China and India as a model to be modernized. The Persian civilization is as old as the Chinese and Indian civilizations. Many Iranians are looking at China and India as models for development. Asian society believes in engaging Iran rather than isolating

Iran. Diplomacy was invented almost three thousand years ago not to talk to friends, but to talk to enemies. If Iran is an adversary state then the logical conclusion is to establish diplomatic ties with it.

The only country in the world which has been able to force a summit on its soil to bring a very large number of African leaders together was China for a China-African summit in 2006. The reason why these African leaders went to China for the China-African summit was because African experiences with other societies had been so demoralizing for them, and in many ways debilitating, that they were looking for an alternative to get out of their embrace.

Former US Treasury Secretary Larry Summers featured Asian growth in the content of his new history book. He wrote, "During the industrial revolution, standards of living went up for the first time in all of human history by 60% within a single human life span. Growth in Asia is now at a rate where standard of living may rise 30 fold, 50 fold or a 100 fold in single human life span. The pace of change that Asia is experiencing right now has never before been seen in history."

The Asian policy makers unrolled their history book to find out what went wrong and caused their economy slow down. They looked around the world to learn what drove societies to economic development, then implemented their findings in their own society. When the economy thrived, societies suffered social and moral degradation with all-time high divorce rates, more kids growing up with single parents, loose family bonds and social unrest in individual life. As the economy thrives, the world will be looking at the Asian society to ascertain whether it can maintain it's natural social safety net where, by tradition, family members are loyal to each other.

In the 21st century, we are going to see a return of history. And in the return of history, there will no longer be one successful civilization, there will be several. India and China will come and play a bigger role. If someone wants to understand what the 21st century will look like then don't look at the last two centuries. Rather, look at the world the way it was a thousand years ago and that will tell you what the 21st century will look like. ■

Manitoba Hydro is a pioneer in High-Voltage Direct Current (HVDC) technology and in Pep talks we will be talking with Mr. Less Recksiedler, Manager of HVDC Engineering Department of Manitoba Hydro.

Mr. Recksiedler grew up in a small community in Beausejour just outside of Winnipeg and graduated from University of Manitoba in 1971 with a degree in Electrical engineering. He started his professional career with Manitoba Hydro in the Telecommunications Department before moving on to the Station Department's protection section.

After taking a few courses in HVDC he became passionate about HVDC and in 1975 he joined the HVDC department. He still remembers this as a very exciting and hectic time; lots of installations and commissioning of new equipment. Every morning there was a call from the President and CEO to see how the HVDC was doing as there was more generation than HVDC transmission.

At his HVDC office on Waverley, Pep Talks asked Mr. Less Recksiedler (LR) – how he sees the role of your parents in your life?

LR: My mother had grade 3 and my father had grade 4 education. My dad owned a farm and my mom ran a small business. Though they did not have education, but they were very keen on me getting an education. My Mom actually wanted me to become a teacher.

Pep Talks: Why did you become an engineer instead?

LR: My brother ran a TV repair shop and I used to go there help him on weekend and holidays as well as help my dad at the farm. A very good, hard working, farming background and also electrical experience such as helping my brother repairing radios, TVs, washers, dryers, and antennas got me interested in the electrical side of engineering; I thought this is something I could really get into and pursue as a career.

Pep Talks: Why would you say, is the engineering enrollment in secondary education declining?

LR: I do not think Engineering has the same attraction it used to have back then. The other thing is, there are a lot of other vocations where you can make a lot more money.

Pep Talks: How we can solve this problem and encourage the best and brightest of the next generation to become engineers?

LR: I think we have to try and get the people interested at the high school level. We should provide them summer jobs, bursaries, or other kinds of support for their education.

Pep Talks: If you look at our high school kids, you will see they are very engaged with sports and other activities that they do not have any time for math and science. Their math skills are waning. How we can be competitive in the world of technology and innovation and secure our future in a knowledge base society not depending on our natural resources if we do not address this issue?

LR: If you structure education too much, you will limit imagination and creativity. We have to come up with a system where we give a little more structure to our education but not too much to limit that creativity. At the same time, bright and smart people have to be encouraged to take engineering or teaching as a profession.

Pep Talks: At this year's Yale's commencement speech, former British Prime Minister advised the graduates to be

global citizens. He said, "the characteristic of this modern world is the pace, scope, and scale of change. Globalization is driving it and people are driving globalization. The consequence is that the world opens up; its boundaries diminish; we are pushed closer together." But we, especially the young generation, become more individualistic instead of becoming global citizens, keeping ourselves away from social and community involvement.

You will not be hearing the young generation talking about going to the orchestra, opera, play, or listen to classical music or even engaging with this different culture. What will be the consequence and how can we encourage the young generation to be a global citizen?

LR: The consequence is not good for our society and when we hire people, at that time we should focus on their social engagement too beside their engineering skills and educational qualifications. But we need everyone's support to encourage this young generation, especially the parents and people in our community. If the parents, the schools, and the community appreciate their communal engagement, then more and more people will engage themselves in those activities.

Pep Talks: We have economic freedom; do you not think we have paid too much for that? It costs us in social and moral degradation. Respect for our parents and people in society is fading. More and more kids are growing up in single parent homes and may be deprived of parental love and education. Is this not a huge blow for our society?

LR: It is one of the unfortunate penalties we are paying for our affluence. When I grew up, we did not have a lot of money. There were large families, nine children in mine, and everybody had to depend on each other. If you building a barn, all your relatives and neighbors would get together and there would be a big work party. All the people would come together and it was a way of life. You will learn a lot working with people, dealing with people, and interacting with people. We miss that today and that is costing us a lot.

Pep Talks: You are not only a manager; you are also the leader of your department. Leadership is not something taught at school, read in a book, or something a person can mentor you into; leadership is something you have to craft like a craftsman over a long period. How did you build that leadership skill?

LR: You pick up skills the hard way sometimes by making mistakes, sometimes by looking at people that have those skills that you admire. What does that person have that I admire so much? How can I emulate those skills? How can I become more and more like him or her?

You have to be around people that you look up to. You have to have role models. My role model was a number of different people. Everybody brings certain skills to the table, but the biggest one I ever had, was one of my previous managers, Mr. Ron Gibson.

You have to realize that you like to be treated in a certain way, and such, other people would like to be treated similarly. People like to be treated with respect and to be known. Ask about their work, family, etc? What they like or dislike? What are their strengths and weakness? At the same time, you have to let them think and grow; you have to empower, challenge, and engage them. Then, they will be willing to follow you, they may not know where they are going, may be uncomfortable with it at the beginning, but they will be comfortable with you. So they will follow you anywhere and that is the leadership. Being a boss is not necessarily being a leader.

Pep Talks: If you look at the innovative and creative companies of today, you will see they are more flat with less bureaucracy and they empower their employees to think, allow them to come close to a creative mind within not only the same department or company but also with people from different companies too.

So you see more mobility among the employees and sometimes some employees open up new companies and compel the old company to innovate to stay on course. Google is a very good example of such a company. How you will scrap bureaucracy and run an engineering company here in Winnipeg like Google?

LR: People are very mobile. You have to involve them in the company and in the decision making process wherever possible. Especially engineers: they want a challenge -- they want to solve all the world's problems. You have to make them feel that they are part of this solution.

The reality is there are limits with any company because you still have to make money. Wherever you can, you have to involve people and you have to hire people with the appropriate skills; not only engineering skills but also skills like leadership, organizational, and social skills, and they are all extremely important. Then you have to set up an

organizational structure. A horizontal one like Google is desirable but not always achievable as there are limitations.

Pep Talks: At a speech at Harvard University, Winston Churchill said, "the empires of the future are the empires of the mind", which means you will be a global player depending on how many creative minds you can gather under your influence.

If you look at an ancient super power for example, Mongol warrior Genghis Khan conquered half of the world by integrating the people with the right skills into his army. Wherever he went he looked for talent, looked for the engineers who could make the cannons needed. But we are doing the reverse of what Genghis Khan did: instead of integrating and letting the foreign trained and educated creative minds contribute to our economy, we are building barriers to disengage them by not recognizing their degrees and skill. Do you think by doing that we can create a global engineering company like ABB or Siemens here in Winnipeg?

LR: Good question. We have rules that we have to follow. We have no choice. Something we struggle with is how you can evaluate that person's education. If we know for instance he is educated from a certain university, we can say without a doubt that we can accept him. ABB or Siemens do not have those restrictions as we do. They recognize a person's skills and abilities. It appears that they have done this by putting the person in the job. If you can do the job, then they will recognize your skill and abilities. We so far have not taken that route, but we used to do that when I started work years ago.

Pep Talks: We are isolated from the ancient civilizations in Asia and Europe by the Pacific and Atlantic Ocean and we have a free ride by believing that institutionalized knowledge through hard work will be enough. We never asked ourselves why these affluent economies fell apart. Do you think that this free ride made us blind and arrogant that we think we are the best engineers: only we can innovate and others can't; no other school can produce quality engineers except ours; and that we are scared that someone better qualified than us will come from outside and will take our job. Does this make us not to accept and recognize their education and skill?

LR: We have the luxury of being a very rich society in Canada. Being rich in natural resources, we are limiting our abilities in human talent and mind because a pressing need is not there. We should look at the old civilization and find out why they imploded. We have to get the people together that make the rules so that changes can occur to make Winnipeg attractive to creative and talented people.

Pep Talks: Mahatma Gandhi said, "We must become the change we want to see". Do you think that as one of the biggest employers of the province, Manitoba Hydro should be part of that change.

LR: I think Manitoba Hydro has to be involved in changing the society as we have such a large impact on it.

Pep Talks: If you were asked to give a piece of advice to the young generation, what would that be?

LR: That's really a good question. I haven't thought about the answer before. I think you have to really enjoy what you are doing and you have to be interested in it. You have to peruse it and you can't let barriers getting in your way. I quote from Thomas Edison and he says, "Genius is one percent inspiration and 99 percent perspiration". If you have a goal and if you want to achieve it, there is always a way, you just have to find it. Make a plan, set your realistic goals, and don't let anything stand in your way of achieving them.

Pep Talks: Thank you very much for your time.

LR: Thank you. ■

continued from page 6, Volunteering and Its Benefits

respecting others and accepting their cultural richness will help us to become a global leader and only volunteering can give us that experience and teach us those important concepts.

Our society cannot function without community-based organizations. It is important that the service of the volunteers not go unrecognized. We have to appreciate the volunteers' work.

APEGM organized an event with this goal in mind. A Volunteer Appreciation Barbecue was held in the APEGM parking lot on June 17, 2008, to recognize all the APEGM volunteers. A decent number of volunteers arrived right after the office closed at 5:00 p.m. and mingled with each other with food, drinks and some live music.

Executive Director Grant Koropatnick gave a speech on behalf of APEGM acknowledging the generosity of all of the volunteers in giving of their time to various committees or events. APEGM President Tim Corkery handed out door prizes. We hope others will imitate APEGM in this demonstration of appreciation to volunteers for their invaluable service. ■

Detach page for posting

The Brown Sheet

5th International Conference on Advanced Composite Materials in Bridges and Structures

The Conference is organized under the auspices of the ACMBS Technical Committee of the Canadian Society for Civil Engineering (CSCE) and is sponsored by the ISIS Canada Network of Centres of Excellence. The success of the four previous ACMBS conferences, the first held in Sherbrooke in 1992, the second in Montreal in 1996, the third in Ottawa in 2000, and the fourth in Calgary in 2004, has established this event as a premier forum for exchange of knowledge and experience with the use of advanced composites in bridges and structures.

More information can be found on the conference web site: http://www.isiscanada.com/acmbs/.

Date: September 22 - 24, 2008

Cost:
$850.00 CSCE Member
$950.00 Non-Member
$275.00 Student

Location: Fairmont Hotel, 2 Lombard Place, Winnipeg, MB

7 Habits of Highly Effective Managers

Presented by IEEE's Women In Engineering Committee and APEGM's Women's Action Committee. Speaker Rick Timlick will provide training and insight into Stephen Covey's 7 Habits of Highly Effective Managers.

The title of his talk will be "An Ocean of Change. Navigating your way through the currents of life using principles of effectiveness.

Cash payment accepted at the door.

Date: October 2, 2008

Time: 7:00 p.m. - 9:00 p.m.

Cost:
$10.00 Pre-Registration
$5.00 Students & WIE Members
$15.00 Walk-Ups

Location: Holiday Inn South, 1330 Pembina Highway, Winnipeg, MB

APEGM Annual General Meeting Professional Development Conference

Competition: Are We Competitive Enough?

Why is Winnipeg a great place to live? Is it the affordable housing? Proximity to the best lakes and beaches in North America? The wonderful diversity of its people? The great restaurants? Winnipeg and communities all over Manitoba have a quality of life that is precious and envied around the world.

We enjoy a great standard of living because of dedication to strong values, perseverance and hard work. Down through the years engineers and geologists have pioneered this province and delivered all the comforts of a technologically advanced society. But we can do more.

This year's professional development conference asks the question: "Are We Competitive Enough?" Not every society has the engineering and geoscience expertise and opportunity like Manitoba. Our province can boast about a world class green energy system, vast mining and mineral resources, top innovation in agriculture, but are we making the most of it? What is the role of engineers and geoscientists in the Manitoba economy?

Date: October 24, 2008

Time: 8:30 a.m. - 11:15 a.m.

Cost:
$100.00 Early-Bird
$125.00 Regular

Location: The Fort Garry Hotel, 222 Broadway, Winnipeg, MB

APEGM AGM Business Meeting

The Annual General Business Meeting is an opportunity for members to become directly involved in the business of the Association, vote on current matters, and acknowledge Councillors completing or just beginning their terms.

Pre-registration is required, lunch and door prizes included.

Date: October 24, 2008

Time: 11:30 a.m. - 2:00 p.m.

Cost:
Complementary with Registration

Location: The Fort Garry Hotel, 222 Broadway, Winnipeg, MB

APEGM AGM Awards Dinner & Dance

A first-class eventing honouring member achievements and corporate contributions to the professions. This special event will be followed by an evening of great entertainment and dancing with the Ron Paley Dand Band -- Winnipeg's Hotest Dance Band.

Ron Paley formed the Ron Paley Big Band in 1976 after playing bass with the big bands of Buddy Rich and Woody Herman with whom he recorded two CDs. He has recorded two big band albums and one trio album. In 2004, the Big Band performed with the Royal Winnipeg Ballet, playing jazz arrangements of songs by Robers and Hart for "A Cinderella Story".

Date: October 24, 2008

Time: 6:00 p.m. - 11:00 p.m.

Cost:
$75.00 Tickets

* All Professional Members & MITs:

Buy one, Get One Free

Location: The Fort Garry Hotel, 222 Broadway, Winnipeg, MB

Ventilation – It Really Blows . . . or Does It?

Come and lean about the ins and outs of ventilation systems.

Featuring Jim Friedman, PE, CIH, Industrial Ventilation Specialist.

Jim Friedman is a senior consultant at AMEC, Inc. in Minneapolis, Minnesota. Jim has five years experience in research and design of HVAC equipment and 21 years experience in source emissions testing and industrial ventilation consulting and design. The focus of much of his work has been as a consultant on industrial ventilation and air pollution control projects with the following industries: mining and metals, food, forest products, pharmaceutical and general manufacturing.

Jim has his BS in mechanical engineering and MS in thermal sciences from the University of Iowa. He is a licensed professional engineer in the states of Minnesota and New York. Jim is a certified industrial hygienist (comprehensive practice) and holds two US patents. Jim has been an instructor and presenter at the Industrial Ventilation Conference at Michigan State University since 1999.

Date: October 29 - 30, 2008

Cost:
$350.00 AIHA Member
$375.00 Non-Member

Location: Canad Inns Polo Park, 1405 St. Matthews Avenue, Winnipeg, MB

New Members Registered May, June, & July 2008

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U.D. Annakkage
S. Ashrafi
G.K. Aust
V. Bhardwaj
R.T. Billingham
G.E. Blazek
S. Blazevski
A.M.S. Born
S.V. Bouchard
R. Cabigting
R.C. Cairo
D. Chan
C.M. Chow
M.-A. Comeau
J.S.M. Couture
R.A. de Vries
M. Deschamps
B. Dhakal
H.S. Diocee
A.L. Dlot
B.A. Donovan
D.D.C. Duarte
S.M. Dueck
N.A. Ebbers
S.R. Elahi
N. Erakovic
H.P. Fahlman
J.K. Fast
R. Fazel-Rezai
S.H. Fulford, III
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T. Garus
M.M. Ghabrial
S.M. Gomez
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G.S. Holowach
A. Holtforster
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R.M. Hudon
M.R.E. Joyce
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M.D. Kulchycki
R. Lalonde
R.S. Lee
C.D. Lepine
P.S.-C. Lim
B. Luo
C.R. Magura
V.M. Maroti
Y. Martel
J.M. Martinez
S.F. Matusch
W.R. Mayberry
M.M. McCandless
R.E.W. McComb
I.J. McIntyre
J.A. McMaster
B.J. Mikolayenko
M.E. Moubarak
W.S. Muhandiram
S.E. Nachtigall
A.G. Nicholson
S. Noghanian
D.J. Pasternak
S. Peng
M.G. Penner
E.R. Poppleton
C.C. Potter
C.W. Pronyk
G.Z. Qamheiah
J.A. Reimer
S.D. Roberts
D.W. Roepke
G. Roy
G.A. Rutherford
H. Sajadi
R.N.A. Sawyer
K. Saxena
N.S. Sidhu
G.A. Siemens
A.M. Small
D.R. Stamm
P.R. Sullivan
R.A. Summers
A. Syed
P.K.M. Tam
J.A. Theriault
R.C. Troeller
K. Usenmez
J.H. Vincent
Y. Wang
L. Wang
M.D. Weber
B.D. Whaley
P. Yahampath

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W.G. Deneen
C.M. Putnam
R.T. Rasor
J.W. Sneed

Members-In-Training Enrolled May, June, & July 2008

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V.A. Abella, Jr.
M.G. Arnaud
A.A. Aroutiounov
M.J. Bernard
D.J.G. Blanchette
M.J. Bradley
A.D. Braun
R. Cameron
J.D. Carswell
P.-Y. Chan
R. Chan
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G.A. Churchill
A.K. Coolidge
K.A. Cumming
D.J. Derksen
D.B. Drake
E.M. Dyck
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M. Eskenasi
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K.M. Fizzard
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B.J. Wilder
K.E. Wilson
L.B. Wood
J.C.L. Yablecki
M.T.A. Zeid
C. Zhang

Reinstatements May, June, & July 2008

G.D. Atamanchuk
H.P. Fahlman

Certificates of Authorization May, June, & July 2008

Advanced Engineering and Environmental Services, Inc.
Burns Maendel Consulting Engineers Ltd.
Cimarron Engineering Ltd.
Coles Associates Ltd.
Crosbie Engineering Limited
Crow Creek Technical Corporation
Domson Engineering & Inspection Ltd.
Fortress Engineering Ltd.
Geo-Xergy Systems Inc.
John Brooks Company Limited
Jorey Electric Ltd.
Larden Muniak Consulting Inc.
MWC Consulting Structural Engineers Inc.
Newton Engineering (2005) Ltd.
Prakash Consulting Ltd.
RBJ Engineering Corporation
RFS Engineering Services Ltd.
S&P Geo-Engineering Ltd.
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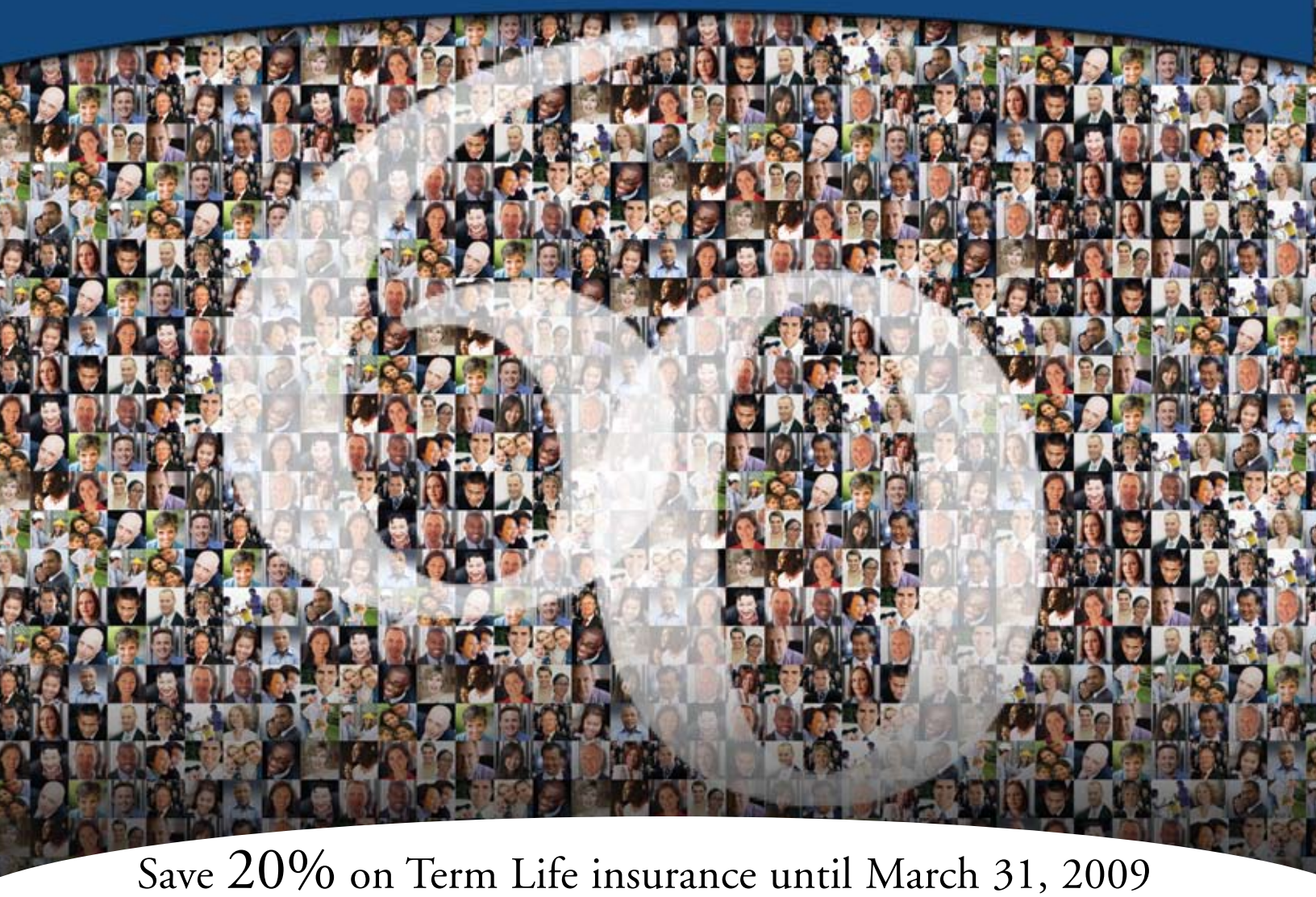

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