THE KEYSTONE PROFESSIONAL

Winter 2008

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89TH ANNUAL GENERAL MEETING

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Association of Professional Engineers and Geoscientists of the Province of Manitoba

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THE KEYSTONE PROFESSIONAL

WINTER 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 by Leif Anderson.
Leif Anderson is an amateur photographer in Winnipeg, MB, who is slowly being pulled into the world of professional photography.
He has been strongly involved in the hobby for eight years and is captivated by the depth of the craft.

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Don Himbeault, P.Eng.
President's Message

Staying in Control

It is with great excitement that I begin my term as President of your association and I look forward to having a very active and enjoyable year. I have served on your Council under three very capable presidents; Dr. Digvir Jayas, Robyn Taylor, and most recently Tim Corkery. I hope to meet the high standards they set for the position.

Perhaps the greatest honour of being President comes from serving such well-regarded professions as Engineering and Geoscience. In surveys ranking the most respected professions by the public, our professions consistently score very high, following closely behind doctors that always seem to hold the top position.

I believe this important status we enjoy with the public is earned in large part by our successful ability to self regulate and our dedication to public protection in all our activities.

I can say that at Council, these responsibilities are always at the forefront in all of our deliberations, therefore any events that may potentially diminish our powers of self regulation, or impede our ability to assure the protection of the public, are cause for concern.

Currently, there are two pieces of legislation that have, or will have, the power to over-ride our act. These are the "Fair Registration Practices in the Regulated Professions" Act passed this year, and the "Agreement on Interprovincial Trade" (AIT), which is due to come into effect in the Spring of 2009.

Details of both of these Acts are in the most recent APEGM Annual Report. While APEGM supports the intent of these Acts, which seek to create fairness, transparency, and promote free trade, there is the potential for us to lose some control of our ability to protect the public.

Here it is hoped a proactive approach with Government authorities in the drafting of the wording within the documents involved will lead to a harmonious and positive outcome for all.

However, the wording of rules and regulations is not easy, because as in all things, there are exceptional cases and unforeseen situations that need to be considered, and how can you consider something unforeseen. I work with people who deal with the Income Tax Act, which is all about rules and regulations that try to account for all situations.

A printed copy of that Act is about the size of the Winnipeg Yellow pages. Hopefully, not much toner will be required to assure that our powers of self regulation and responsibilities to the public are maintained as these Acts and regulations take form.

So, this should be another busy year for Council, attending to these and the many other matters before the Association. I look forward to serving you through APEGM this year and welcome your comments. I can be reached by mail or fax via the APEGM office, or by e-mail at dhimbeault@deloitte.ca. ■

Engineering Philosophy 101

Thoughts from the stage at Convocation

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

Fall Convocation saw another group of young people pass from "student" to "academically qualified" on the long road to professional registration. Each of these new grads has spent 4 or more years during which they moved from high school "achievers" to potential EITs.

It is a bittersweet experience for those of us who are privileged to share the "school years" with these bright young people. They come on campus as the best the high school system has to offer, full of confidence based on their past successes. They go through a reality check as they discover that all their classmates were "the best" in their class too. They learn to study, to appreciate grades other than "A+" and to work harder than they ever believed was possible. They make life long friends who share their trials and tribulation during, and after, the journey. They leave, understandably proud of their accomplishments and hoping to be able to make a difference in the new world they are about to enter.

> "They need to learn when "close enough" is the "correct" answer"

The academic experience shared by these young people is shaped by rules that are imposed by the Engineering profession through the Canadian Engineering Accreditation Board (CEAB) and interpreted by the academic staff of the institution. CEAB requirements speak of "industry appropriate" content to prepare graduates for the careers they aspire to. Academic reality requires graduates who understand the theories behind that "content" as well as the limitations of the theories. Social reality requires that they understand where they, and their future profession, fit into the overall puzzle. Economic reality requires that they have technical skills that are marketable while they go through the EIT phase of their development.

It sort of reminds one of the old proverb that advises you to keep your feet on the ground, your head above the clouds, your nose to the grindstone, your shoulder to the wheel, your finger on the pulse, and your eye on the ball, and then try to work in that position. But our Engineering students seem to be able to meet those constraints.

Typical classes include fundamental and advanced math and science, constrained engineering science and "open ended" industry based design, with a healthy dose of humanities thrown in for good measure. They have experienced the "design" process from concept through prototype to fabrication, demonstration and communication. In addition to the CEAB "list" some students choose to take minors in Management, Arts, Music or one of the Sciences. On graduation day, however, you can be confident that the students have survived a broadly based experience that meets the traditional definition of a "liberal education".

New Engineering graduates are typically in their early 20s. They have a firm foundation upon which to build. But it is only a base. They have 4 or more years of education, not 20 years of experience. They need the guidance that only an experienced engineer can provide as they learn how to apply the knowledge they have, or have learned how to obtain, to real world problems. They need to be encouraged to use their creativity in applying their knowledge. They need confirmation

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

Good Things Coming Your Way

The new year happens early at the APEGM office. December 4th will be the first meeting of the new APEGM council, so it is fitting to say "happy new year" to all councillors and the membership a bit earlier. So what does the year have in store? Or perhaps we should ask: What is Santa gonna bring us for Christmas? Have you been naughty or nice? The following is a listing of the many good things coming your way this year.

Firstly, in this issue of the Keystone Professional you will see many new faces: New President Don Himbeault; new councillors Jeanette Montufar, Don Spangelo, Sheila Dresen, and Cindy Rodych. These professionals have agreed to invest time and effort to guide the association over the next few years. Read their biographies and send them an encouraging card or email.

Secondly, the new office was completed in late November and the APEGM staff moved in December 1st. Wow! What a great place. A formal ribbon-cutting ceremony will be held during Provincial Engineering and Geoscience Week March 2-6, 2009, but in the meantime please come down and visit us at the new address: 870 Pembina Hwy. Oh yeah, don't forget to wipe your feet before walking on the new carpet.

Thirdly, more meet and greet events are planned for the new year. The McKinley Room at the new office can accommodate about 100 people in a stand-up reception format. It has been suggested that APEGM host a drop-in event after work, once-per-month so that students, MITs, and practicing professionals can meet and exchange business cards. One member even offered a name for the monthly event – Beer & Business Cards. Also, Assessment Officer Claudia Shymko is planning some new information sessions for internationally educated graduates. Watch for an email or Facebook message announcing these events.

Fourthly, the new member database has been carefully programmed by Andrew Reddoch and the member-in-training reporting function has been extensively tried and tested by volunteers. Thanks to everyone who has contributed countless hours of testing time and valuable feedback. We're hoping that online reporting through a secure internet webpage will be a great improvement for MITs and supervisors.

Fifthly, the new Fairness Commissioner was announced October 22, 2008 by Labour & Immigration Minister Nancy Allan and the successful candidate was Ximena Munoz. Ximena, originally from Chile, came to Canada as an immigrant professional and has spent over two decades working to improve settlement and labour market services for immigrants. As director of the Manitoba Settlement and Labour Market Services Branch, she has worked extensively with provincial departments and with Citizenship and Immigration Canada. She has provided lots of support and guidance to APEGM and is a friend of the engineering profession. We look forward to supporting Ximena in her new role and providing assistance in developing regulations that are effective for all professions in Manitoba.

Lastly, do you have a sense of direction and optimism about your chosen profession this year? If you were at the annual general meeting and received a copy of the annual report (also available online), you'll know my report ended by asking these questions: "Why do we do what we do? Why are we a part of these historic, honourable professions? Who is called and who is responding to the call? What is the profile of the future engineer or geologist? I am looking for members who are interested in exploring these questions through discussion. My goal is to understand the issues facing members in this period of history; to ensure that our professions are effective at serving the public and each other. Remember, it's your profession – contribute to it, build it right, and it will outlast all of us. Happy new year to all!

Your feedback is invited and always welcomed. If you have any thoughts on anything you read in the KP, please email me at apegm@apegm.mb.ca or message me through Facebook. ■

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that there are no right answers, but that some answers are better than others. They need to learn when "close enough" is the "correct" answer.

Thanks to the diligence of the CEAB, graduates from Canadian Faculties of Engineering are outstanding raw material upon which the future of the profession can be built. But remember, engineering education continues beyond the classroom. If new graduates are to reach their potential, they need the help of those to whom they report. They bring the energy and knowledge to make things happen. Hopefully the rest of us will have the wisdom to help. ■

An Opportunity to Look the Future in the Eye

D. Ennis, P.Eng.

The 2009 Canada-Wide Science Fair will take place at the University of Manitoba Fort Garry campus from May 10 to 13, 2009. It is our country's largest extra-curricular youth activity related to science and engineering.

The categories cover engineering and the sciences from health to computing. The expectation is that there will be over 400 entries from students in Grades 7 to 12 that have been vetted by the Science Fair system in the provinces and territories of Canada. Out of those 400, there will be more than 100 that will be in the engineering or geosciences categories. What that means is that there will be a need for approximately 100 engineer/geoscience judges – volunteers who will have a unique opportunity to look into the faces of the best and the brightest junior high and high school students in the country.

I can attest, from having served as a judge at the 2008 Fair and seeing first-hand the quality of the entrants, that it is unquestionably a rewarding experience and, as the title of this article suggests, an opportunity to look into the eyes of the future of Canada.

WHAT'S IN IT FOR ME?

Quite apart from the reward from that experience, it is a once in a decade opportunity to showcase the support of Manitoba's engineers and geoscientists for careers in the professions and to highlight our province and our professions by volunteering to serve as a judge. It is also an opportunity for MITs to earn volunteer hours, and for P.Eng. and P.Geo. members to lead by example.

WHAT'S IN IT FOR APEGM?

Over the last few years engineering has acquired a reputation in the national science fair community for unreliability by being last-minute no-shows, probably because of their unanticipated work commitments. If Manitoba can organize and deliver a full and reliable contingent of engineering judges, that "bad rep" can be reversed, with APEGM being recognized as the catalyst.

WHAT IS THE COMMITMENT?

The commitment is for the evening of Monday, May 11, 2009, the full day and possibly a bit into the evening of Tuesday, May 12, 2009, and for at least 40 of the judges who participated on the Tuesday, the full day again on Wednesday to judge the entries that were selected on Tuesday to enter the special categories such as automotive and environmental.

WHAT WILL HAPPEN TO YOU?

- You will register as a judge online through the Youth Science Foundation Canada (www.ysf.ca), the national science fair co-ordinator in Ottawa.
- You will attend an orientation/briefing session at the University of Manitoba on the Monday evening May 11 (with dinner provided) at which time you will receive your judging assignments for the next day. At that time you will also receive a hard copy of the instructions and the judging forms that are to be completed the next day.
- Before going home for the evening you will visit the displays booths of entries that you have been assigned to familiarize yourself with the entry in the absence of the presenter.
- You will arrive at the Science Fair site at the University of Manitoba at 8:00 a.m. on Tuesday May 12, 2009, for a continental breakfast and meet with the members of your judging team. There are at least five members on each judging team.
- You will then individually judge about eight entries in a face-to-face process over the day in half-hour intervals (20 minutes of interview and 10 minutes of marking). The judging is based on an interactive oral discussion between the participant(s) and you, the judge.
- Each entry is judged at least six times throughout the day.
- At the end of the day on Tuesday you will meet with your team, who have also judged the same entries, to decide on your team's rankings.
- If you are a team captain you will then meet with the other team captains in the engineering category to decide on the rankings of all the entries.
- If you agree, the process will be the same for the special category judging on the Wednesday.

HOW DO I SIGN UP?

- You provide me, Dave Ennis, with your email address which I will forward to Youth Science Canada. My emails address is ns2@mts.net and my phone number is (204) 453-8363. Alternatively you can contact William Boyce at the APEGM office.
- Youth Science Canada will contact you by email providing instructions on registering as a judge. (Be sure to specify that you are volunteering for the engineering or geoscience category.) Once you are registered, Youth Science Canada will maintain contact with you, as will the Manitoba Judging Committee. ■

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

Thoughts On Design

. . . AND RESPONSIBILITY.

One of the "benefits" in my American Society for Engineering Education membership is a daily news clipping service that identifies articles of interest to Engineering educators. Last August it contained an interesting note regarding hybrids and noise. I was in a hurry so I simply copied and saved the clipping for future reference, after which I promptly forgot it.

A couple of months later I found my self in a discussion about the need to justify design solutions. I recalled the article, and much to my surprise I found the file I had saved. The design solution in question is a device that will make a hybrid that is running on electricity sound like an internal combustion engine. My question is, why?

Well, they claim there is a "reason". Quoting from the clipping, ". . . hybrids, which "run only on electricity at low speeds [and] emit no more than a whine around town" present a problem "for the blind -- and pedestrians, and cyclists, and people who simply don't pay attention -- who rely on the familiar rumble of internal combustion to know what's coming down the pike." "

The question that occurred to me is, is this a problem that needs a solution or a solution that needs a problem?

I'm in no position to debate the merits of this design, but for me the question persists, why?

The tag line from a recent Frontiers of Construction show about Trains of the Future noted that "Inventors and Engineers will design and construct whatever it takes to make them a reality."

Is this just another way of saying that being able to do something justifies going ahead?

A very different perspective was presented in the 1929 Encyclopedia Britannica where Alferd Douglas Flinn stated, "The engineer is under obligation to consider the sociological, economical and spiritual effects of engineering and operations and to aid his fellowmen . . .". This clearly places a level of responsibility on the engineer beyond the simple acceptance of being technically able to do something. But some would say this is just old fashioned and unrealistic.

And then we have Cannon 2 of our Code of Ethics which states "Each practitioner shall regard the physical, economic and environmental well-being of the public as the prime responsibility in all aspects of professional engineering and professional geoscientific work." Once again, the responsibility theme, but it also suggests that the design mentioned above can be justified if ". . . the blind -- and pedestrians, and cyclists, and people who simply don't pay attention . . ." are actually at risk.

In the consumer society in which we engineers live and work, we create most of the products society "needs". However we find ourselves in the conflicted position of having the capability to do things, but the ethical responsibility to consider the impact of what we do. It can be argued that one of the impacts of any design decision is to commit both human and physical resources, both of which are in short supply. Does it follow that we should make moral judgements relating to the work we undertake?

If we are not part of the solution, are we part of the problem? ■

New Members Luncheon - October 2008

H. Buhler, EIT

The October 21, 2008, APEGM New Members Luncheon was an exciting event for those who have finally completed their Professional Engineering requirements. In celebration of their achievement all new members were invited to enjoy a delicious luncheon at the Niakwa Golf and Country Club and accept their Certificates of Registration personally from APEGM's President Tim Corkery. This was Mr. Corkery's last public event as APEGM's President, as Don Himbeault will be assuming the role of President as of October 24, 2008.

According to Grant Koropatnick, APEGM Executive Director. new members can be broken into three main groups, mobility movers, new graduates, and new Canadians. The "Mobility Members" are members of Engineering and Geoscience Associations in other provinces who have applied for membership in Manitoba. Mr. Koropatnick recognized the fact that not all members registered in Manitoba actually reside in Manitoba and gave a special welcome to those who have actually moved permanently to our province. Mr. Koropatnick commented that there were actually three mobility members in attendance at the luncheon.

Next welcomed were the "New Graduates", those who have completed the Member-in-Training program in Manitoba. Mr. Koropatnick sympathized with this group who now has to complete a 48-month program as apposed to the 24-month program he completed after graduation. He also commended this group for their diligence on completing the bi-annual reports which can be arduous and time consuming.

Finally, Mr. Koropatnick welcomed the third group, "New Canadians" - foreign-trained members. This group has overcome geographical, cultural, and language to have their professional status recognized in Canada.

After the lunch was served, each new member was presented with their Certificate of Registration and photographed receiving their certificate. After all the certificates were distributed the group assembled for a group photo. The remaining audience members congratulated the collective new members with a hearty round of applause. ■

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

Providing Added Value to the Profession - The Canadian Engineering Accrediation Board

I feel it timely to focus a few CEO messages on the added value Engineers Canada brings/offers its constituent members and, by extension, the profession. The organization aims to be proactive in its response to the directions given by its Board of Directors, and one of my focuses as chief executive officer is to ensure that all Engineers Canada initiatives meet the organization's strategic objectives, which are:

- To conduct activities in support of constituent members' regulatory activities (admissions, practice, discipline and enforcement).
- At the national level, augment constituent members' efforts to ensure that all people practicing engineering are licensed.
- Influence federal government public policy and decision-making on matters related to the practice of engineering.
- Create and utilize strategic partnerships and alliances to address issues of national and international scope and importance.

Education is the cornerstone of the engineering profession. To fulfill its strategic objectives, and to provide its constituent members with the support they require, Engineers Canada is involved in the educational system in terms of accreditation. Our Canadian Engineering Accreditation Board accredits undergraduate engineering programs for our constituent members, ensuring that aspiring engineers are provided with the academic requirements necessary for licensure as a professional engineer.

The Accreditation Board also works closely with Canadian universities to ensure that graduates have the skills they need to become productive members of the profession. I am pleased to inform you that this year, as we continue to adapt to the needs of both the profession and society, new Accreditation Board terms of reference and criteria were approved following extensive consultations. The new accreditation criteria bring aspects of outcomes assessment balanced with input assessment from the previous criteria. Outcomes assessment requires educational institutions to demonstrate that graduates possess specified attributes, knowledge and skills. It is designed to allow educational institutions more flexibility within their programs and to focus accreditation on what graduates learn in their programs.

The updating of the criteria was conducted in the spirit of collaboration. The Accreditation Board will continue to consult with the constituent members, the National Council of Deans of Engineering and Applied Science, and others as it moves towards its implementation. Information about the new criteria is available in the The Canadian Engineering Accreditation Board report.

Besides ensuring Canada's very high engineering education standards, the Accreditation Board also plays a key role in the international mobility of professional engineers by assessing the equivalency of the accreditation systems used in other nations relative to the Canadian system, and by monitoring the accreditation systems employed by the engineering bodies which have entered into mutual recognition agreements with Engineers Canada.

Canada's high standards for engineering education and mobility are renowned internationally as a result of the Accreditation Board's work. Canada's professional engineers deserve to be proud of their profession and of its accomplishments. Our mobility system addresses the needs of the engineering profession-a profession that must be at the forefront of societal change.

All of this could not be accomplished without the 15 volunteer members that comprise the Accreditation Board and the incredible network of professional engineers who volunteer to serve on accreditation visiting teams. I thank and applaud all of these individuals, whose service greatly benefits both the profession and society as a whole.

Over the next few months you will learn more, through my messages, of other Engineers Canada activities put in place to deliver on the organization's strategic objectives. The organization is here to support the work and efforts of the constituent members and by doing so it continues to provide added value to the profession. ■

In Memoriam

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

John Borger
Robert Smith

Professional Development & Networking Events

The Seven Habits of Highly Effective People

H. King, EIT

Rick Timlick started the evening by asking the audience "What were you doing ten years ago?" His question gathered answers that ranged from graduating high school, starting my first engineering job to, in my case, building Lego cities in my parent's basement and preparing to start middle school. The second question - "Where do you see yourself in ten years?" Again, a little thought and some imagination led to answers such as becoming a VP within my company, moving overseas, retiring. Mr. Timlick's final question – "What is the one significant thing that happened between where you were ten years ago and where you hope to be ten years from now?" – change. Whether we like it or not, change happens. And knowing how to deal with change is the key to being highly effective both in your career and in your personal life.

Mr. Timlick, a senior consultant at Millennial Leadership Consulting, was the guest speaker at "An Ocean of Change - Navigating your way through the currents of life using principles of effectiveness" - an event hosted in October in partnership with the IEEE Women-in-Engineering Chapter (WIE) and APEGM's Women's Action Committee (WAC). An enthusiastic and engaging speaker, Mr. Timlick held the attention of the group as he discussed Steven Covey's 7 Habits of Highly Effective People.

First released in 1989, *The Seven Habits of Highly Effective People* lists the seven principles that Steven Covey believed would help a person obtain complete interdependent effectiveness[1] and deal with any form of change occurring in their life.

1. Be Proactive.

   There are two types of people; those who are proactive and take responsibility for every aspect of their life, and those who are reactive, blaming others for the negative aspects of their life. No matter how easy it is to blame someone, or something, else for the negative occurrences in your life, don't. We are responsible for our own lives – recognize this and take action to correct or change all negative areas of your life.

2. Begin with the End in Mind.

   Create a "personal vision statement"; a goal or achievement that you want to reach in life. Set a timeline for reaching this goal and strive to achieve it every day.

3. Put First Things First.

   Prioritize. Separate tasks into four groups:

   1. Urgent (deadlines, emergencies)
   2. Those that appear to be urgent but really aren't (checking your email messages every 10 minutes)
   3. Those that don't seem to be urgent but should be prioritized (planning for your financial future, organizing your workspace)
   4. Non-urgent (watching tv).

   Focus on the urgent tasks first and then move down list, making sure to allot time for tasks in Group 3 (you'll be thanking yourself down the road). What may seem like it takes too much time out of your busy schedule may be your savior down the road. Spend 5 minutes every Friday afternoon cleaning your desk; you'll be thanking yourself when you can find that important paper right away instead of having to dig through mountains of paper desperately looking for it!

   Too many people are perpetually checking their email messages, voicemails, etc, disrupting the effort they are putting into the urgent tasks. Every time you check your email while in the middle of another task you lose a focus on the original task, causing you to refresh your memory when you return to the original task. Yes, it is tough, but checking your email can wait another 10 or 15 minutes until you are finished the first task.

4. Think Win/Win.

   A simple one: When in a discussion, negotiation or argument always think win/win and make sure to keep this attitude at the front of your mind.

5. Seek First to Understand, Then to be Understood.

   Its human nature to get frustrated when someone doesn't understand a point you are trying to make or an explanation you are giving. When someone is explaining something make sure to listen contently until they are finished – never jump in partway through and assume you know the solution. Hear the individual out first because you never know how the conversation is going to end.

6. Synergize.

   Take the first 5 principles and apply them to every team relationship in your life – this includes not just work teams but your marriage, your relationship with your children, friends, family members, even your doctor!

7. Sharpen the Saw.

   In order to be satisfied at your job you have to be self-satisfied. Each day put away time, even if just 5 minutes, to participate in something you enjoy doing, such as a sport or reading a good book.

More information regarding Millennial Leadership Consulting can be found online at http://www.millennial.ca/index_files/Page266.htm ■

Collapse By Snow Load?

D. Grant, P.Eng.

Most winters we see at least one news item about a big building somewhere being crushed by the weight of snow on its roof. In every case, there is the implication that the failure was due to the design of the structure.

Manitoba snowstorms seldom leave the heavy deposits common elsewhere, and our snow tends to blow and drift. We still get our share of snow related building failures each year.

Many building owners do not know that a building can have a much higher snow load on its roof than the taller building next to it. If the owner only sees the modest snow buildup on the taller one, the shorter, hidden roof can be in trouble.

Snow melting and freezing into a heavy layer of ice can lead to an excessive load that appears very thin. A seven inch layer of snow, that includes three inches of ice, is very heavy. This process is less of a factor during the coldest weather in an unheated structure. In a large, heated, flat-roof building, inadequate drainage of snow-melt can result from frozen downspouts, creating a heavy layer of ice.

The knowledge is out there. We need to make sure it is used. A final report usually appears a few years after a collapse happened, long after it has been forgotten by the media. The contents of these reports include the most important information on these events. In most cases, the design did not consider so much snow, and the owner took no steps to remove the snow prior to collapse. In a few cases, the building had not been properly maintained, or had been modified.

The fatal flower market collapse in Moscow was attributed to a lack of timely repair. On the other hand, in Moscow, odds are good that the building owner was less a friend of the government than the designer. Regardless of the objectiveness of the data, we should periodically review it.

For several years, the APEGM Professional Development Committee has been hoping to hold a PD session on this topic. Watch for more information on a potential session to be offered in 2009. ■

Clear Communication Is Everything

L.F. Lautens, P.Eng.

I graduated from the University of Manitoba in Civil Engineering in 1973 and was hired by the Bridge Office of the Manitoba Department of Highways and Transportation. After my first year in the design section, I was assigned to the field for a two year term as a resident engineer supervising bridge construction.

At that time, many of the older experienced bridge inspectors were retiring, so my duties included training the young replacements. This because frustrating because most only lasted a few weeks and then quit due to the long hours, the travel and the isolation of living alone in small hotels many miles from Winnipeg.

My time was becoming solely devoted to training and then saying goodbye to the revolving door of young men assigned to me. After many repeats of this unproductive exercise, I discussed it with my boss. I told him of the wasted time, energy and money. Surely even I could find better applicants. So he said find them. I then prepared a new job description and through Manpower, interviewed and hired a young engineering student. No more quitters or duds for me.

My trainee was keen, eager to learn and wanted to start immediately. His English wasn't the best, but we would work on that. He came to my office on Portage Avenue in Winnipeg and I spent considerable time with him going over the training manual and his upcoming field assignment. Finally, he was ready to be sent to the construction site which was on the Trans Canada Highway near the town of MacGregor, which is just past the city of Portage la Prairie.

I beamed as I proudly paraded my new inspector around the office. I then gave him directions to the rural work site. I told him to go to Portage and then go to MacGregor. He couldn't miss it. He was to phone me later that morning when he arrived. He then left and time passed. Much more time passed. No phone call. Finally, late in the afternoon, he called. He's looked for the construction site for six hours, but couldn't find it. He's left the building, gone to Portage Avenue, and then drove down McGregor Street in Winnipeg to a residential suburb in the city. I said, "what?". I was now speechless as he was still in the city and still 130 kilometres from his intended destination.

When I came to, I said, "You were to drive to Portage la Prairie, the city, not Portage Avenue, the street in Winnipeg. Then you were to drive to MacGregor, the town, not McGregor Street in Winnipeg". I mumbled to myself, "Did this just really happen?" You can only imagine my embarrassment in the office after this fiasco.

I learnt a very important lesson that day. Clear communication is everything, whether it is in engineering or everyday life. To this day, I often replay my directions to that man and ask myself was it him or was it me? Or was it both of us? ■

HOLLYWOOD COMES TO APEGM

G. Koropatnick, P.Eng.

It's not very often that you get a chance to appear in a movie, but it happened – Hollywood came to APEGM. Actually, I declined the invitation to appear as an "extra", but observing the whole event was fascinating. It taught me a lot about the diverse skills of engineers. One of the pleasures associated with my role as executive director is meeting and talking with a wide variety of people in the engineering and geoscience professions. I am always impressed by the creativity of our members. I used to think that engineers were mostly involved in logical, problem-solving tasks; seldom pursuing "wild-eyed passions" in their day-to-day work until I met the boys from FireGate Films. Engineers Paul Boge and Chris Radkte combine their technical skills with their creative passion for producing short and feature length films.

Coordinated Teamwork

I must confess, I was expecting a bunch of amateurs with a borrowed video camera and some home-made lighting. What arrived at the APEGM offices early one Saturday morning was a team of 20 highly organized people with equipment, props, wardrobe and food service – the parking lot was filled! Everyone arrived on time and were coordinated by a few leaders with clipboards. Actors, sound techs, camera operators and food preparation staff went to work; bringing the various elements together.

High Tech Production

The production was high tech involving laptop computers, digital sound equipment and space-age lighting. Director Paul Boge, P.Eng. sat in the hallway directing the actors with a headset and small screen on a unit that looked like a portable DVD player. Inside the APEGM board room the actors portrayed a business meeting with serious looking suits and body language (not like council meetings). It became evident to me that there was a lot of engineering skill being utilized in this production. Anytime you can coordinate equipment, resources, personnel and location in a short time frame to achieve a critical goal with excellence and efficiency you are utilizing engineering skills.

The Film

Among Thieves tells the story of three friends who reunite 10 years after high school and uncover one of the key reasons for the war in Iraq. The movie takes real life events leading up to the war that have not been addressed by the main stream media and examines them through the eyes of the characters. An action, suspense, conspiracy thriller, Among Thieves was shot mosrly in Winnipeg with a local cast and crew. Trailer can be seen at www.firegatefilms.com/amongthieves. For tickets, contact Paul H. Boge at paul@firegatefilms.com or 471-0872. ■

From Top to Bottom:

APEGM members Kevin Radtke, left, and director Paul H. Boge also left;

In the middle of a take;

This picture features APEGM's Hans Boge seated in the center. Hans helped out as an extra in the film.

The production team having a laugh in between takes;

Council Reports

Friday, October 24, 2008 - AGM

A. Erhardt, EIT

The meeting was opened by President Tim Corkery who thanked those in attendance for coming, and announced the winners for APEGM's annual awards, which were to be presented later that night. He thanked the APEGM staff for their efforts in the gathering of the meeting, and as quorum had been achieved, the meeting was called to order.

A moment of silence was observed for the members who had passed away over the past year.

As per APEGM bylaws, notice of the meeting was provided, and the notice of the meeting was read by APEGM Executive Director Grant Koropatnick. The notice confirmed dates, times and location of the meeting, as well as indicating the council members whose term continued for another year, whose term was ending, and the members who were up for nomination to council. Proposed bylaw changes and resolutions were also indicated in the notice.

The agenda was approved and the meeting proceeded on. President Corkery introduced the current council members and APEGM staff to those in attendance. Committee chairs and chapter representatives in attendance were also introduced. Guests from outside the province included representatives from APEGS (Saskatchewan), APEGA (Alberta), PEO (Ontario), and Engineers Canada. The dean from the University of Manitoba and representatives from the University of Manitoba Engineering Society were also in attendance, along with representatives from CEM and MAA.

The report of President Corkery was then up for review. He highlighted some of the key issues that were debated during his tenure as president of the association. Shortly thereafter, the minutes from the previous year were then approved. Following this, the results from the council election were announced. New councillors include Rick Lemoine, Jeanette Montufar, Ed Ryczkowski, Don Spangelo, and John Woods. The appointed councillors for the upcoming year were Dr. Shiela Dresen, and Cindy Rodych.

The auditor's report for the previous fiscal year was then approved. The auditor for the upcoming year was then selected and approved by those in attendance. The association budget and schedule of fees that was previously approved by council was reviewed as an information item. Again, there were no questions and the items were duly received.

Next up was the opportunity to nominate APEGM members to sit on the Nominating Committee. After a brief silence, five members were nominated. These nominations were followed by the review of the proposed bylaw changes. There were three changes amended, and an additional three bylaws introduced by Council. Five of the six bylaws were approved.

The committee reports were then reviewed and approved without question. As for resolutions, none had been brought forward in advance so no debate was required. Tim Corkery then asked the retiring councillors to step forward and be acknowledged for their efforts and dedication to council. Four councillors ended their terms on council this year.

As there was no other business, the meeting continued with the historic gavel ceremony, which signified the transition from the current council president to the president-elect. Don Himbeault was introduced as the new APEGM council president, and he addressed those in attendance, giving some personal history, along with some of the hopes and goals that he wished to observe over the course of his term as president.

As things neared an end, Tim Corkery reminded those in attendance of a few things on the horizon, including Provincial Engineering and Geoscience Week in March, the Making Links Engineering Classic Golf Tournament, and the need for award nominations for upcoming years. Following an announcement that lunch was to follow, the meeting was adjourned. ■

Challenges of our Generation and the Solution

R. Minhaz, EIT

We feel how complex challenges are globally right now. Not a day goes by when we are not buffeted by some new shocks, some new disturbance. We are constantly feeling how the whole world is now pulled in one direction or another: whether it is soaring food prices or soaring energy prices, the climate shocks or distresses of geo-politics, and the urgency of finding solutions to problems that are becoming worse as the world is becoming ever bigger.

We are at a turning point moment in history. We are not the first generation to be at a turning point. There have been others before and indeed each generation faces its own challenges. Our generation's challenge will be the challenge of sustainable development; the challenge of living together on a crowded planet.

The world is more crowded not only in the sheer numbers inhibiting the planet: roughly 6.7 billion people. The population is increasing by roughly 80 million people each year. A population increase that will carry us, on current projections, to over 9 billion people by mid century.

Secondly, we are crowded also in the unique economic prowess that we have on this planet and what that means for the relationship of societies with each other. Societies that barely knew each other just moments ago in the sense of human history, now are face to face. There is a lot of incomprehension despite proximity, and they are bound together in ways that were almost unimaginable and unrecognizable until very recently.

Thirdly, there is crowding in the relationship of human society to the physical earth because of so many humans, and such a large measure of economic production. What human activities are doing to the planet is also only beginning to be fully appreciated. Not a week goes by without a new geo-political surprise or global market surprise, not a week goes by where scientists do not uncover yet another aspect of how human pressures are deranging the physical systems and thereby putting at risk the very basis of our well being and even survivability.

To understand this, it is very important for us to appreciate how special our time is, the uniqueness of the era that we are living in both in terms of numbers and in terms of the economic quality of the world. It is not quite a secret, though not fully intelligible, that what happened with the revolution of technology and food production enabled the human population to break out of the long pattern of slow population growth, in the mid 18th century, that had characterized almost all of human history. What is astounding is that in a context of such dramatic population growth, the output per person on the planet has also sky rocketed. So much so that the total economic production, which is the product of the number of people times the output per person, has increased by more than 100 fold since the start of the industrial revolution.

Up until around the year 1800, the thing one could say about the economy in any part of the world was that they were poor. Because there was essentially no such thing as affluence, the rich lived at the level of poor people today in terms of what they had available. At that time, 90% of the world's population lived as subsistence farmers in villages. Incomes were at best only slightly above survivable level. Europe as late as the middle of the 19th century, as Ireland so painfully reminds us, was suffering from disasters that could lead to mass famine, mass death rates, and mass suffering.

This dramatically changed with the ability of the human being to harness energy in new ways. Physics teaches us on the first day in class that energy is the capacity to do work, and work is what brings us above the margin of survivability. Without energy mobilized beyond our physical and animal traction, we never could escape that margin of subsistence. It was more than anything else coal and the steam engine that was the pivotal change in human history because it enabled the mass mobilization of energy. That

set off a chain reaction of technologies that remain today. That technological change, which we call the industrial revolution, raised per capita income from subsistence around $400/500 per person per year on the scale economists use that is called purchasing power, adjusted income to an average on our planet today of about $10,000 per person per year.

What is stunning is the multiplication of those the population increased and the output per person means that after countless millennia of remaining almost unchanged over all level of economic activity, there has been an explosion of economic activity. The total output for the world per year sky rocketed to 70 trillion dollars aggregate output in the year 2008, where up until 1800 had always been less than 70 billion dollar.

These two pictures change everything for us and they reflect the uniqueness of our time. It requires rethinking how we are living on the planet, how we are living with each other and how we are living with the physical earth.

What happened in this explosion is the following: when the industrial revolution started, it started in one corner of the world. In fact it started in England where the steam engine and the textile machinery took hold first, where industrialization was pioneered. Then industrialization spread to western Europe, north America, Oceania to Australia, New Zealand, and a few other parts of the world in the 19th century.

So the dominance of a small part of the world relative to the rest of the world in economic terms was the defining character of the 19th century. The dominance of the north Atlantic, especially the dominance of western Europe and the British empire and as the economic implication of the industrialization unprecedented event in human history took hold, we also had an unprecedented geo-political event which was the dominance of Europe over the world's political system as well as the world's economic system.

In Asia, there was only one place that mastered industrialization in the 19th century, and that was Japan after its capitalist revolution, the so called Meiji restoration, in 1858. For China and India, it was a period not only of relative decline but absolute decline in many ways. China made some unwise decisions around 1433 when it closed the economy to trade, and closed the society to the diffusion of knowledge internationally when it scrapped great fleets of admiral Zheng He and became an isolated middle kingdom. From then upto the time when Adam Smith wrote that China is rich but static, and then losing and falling behind the industrial revolution, then falling prey to British arms who fought with the Qing dynasty in the opium wars, then it declined under increasing western pressure and the dissolution of Chinese society in the Tapping rebellion and the Boxer rebellion, then war lord area and the invasion by Japan. It was just one thing after another for five hundred years causing China to sink to miserably low levels of poverty and fall behind atleast a century in terms of technology. India fell under British imperial rule that lasted until just after World War II.

What is stunning therefore is that while the industrial revolution unleashed unprecedented economic activity, it was narrowly focused on about a sixth of the planet. Technology was only gradually diffused to the rest of the world, and the world became highly imbalanced as to the location of economic activity.

What is happening today: one of the two most important trends in the world is that after World War II and after the imperial era with sovereignty restored, with the secret of industrialization spreading to most parts of the world, with mass literacy encouraging the mass spread of scientific knowledge and technology, the capacity of all parts of the world to catch up with the industrial leader.

The result of all of this is that Asia, after centuries of relative decline, is now the centre of the most dramatic catching up in human history. This is manifested in the staggering rate of economic development the likes of which we have never seen before.

In this dramatic process of economic catching up there is just one problem: an awful lot of economic activity needs an awful amount of resources. This process has happened very suddenly, and we are only beginning to understand the weight of all that activity. It is actually so large right now that the planet itself is creaking under this weight.

Economic models where economists put everything in equations and are trained to forget the real world but in very sophisticated and beautiful mathematical ways, which are based on the idea that the output of an economy depends on number of people, the amount of physical capital machinery, buildings that they have to work with and the buildings and machinery that come from the output. It is an ingenious system. Output produced by people and machinery, and machinery produced by the output for more machinery. However, notice that nature does not show up in those equations. Land, water, and air are left out as a simplifying assumption. Indeed when the great economic models were developed, economists said "We will leave nature aside". The idea was that there is enough earth, enough ocean, enough air, enough resources for economic growth as far as our saving and capital accumulation can take us, and we do not have to worry about that other stuff because that will not be a limiting factor to our growth. The limiting factor

will be our politics our methods of market organization, our cleverness but not the physical earth.

Nature is now becoming the limiting factor for our economy and our well being. It is going to require a fundamental rethink. Economists are not trained to do that, and that is why the inter disciplinarily knowledge for sustainable solution is so vital. We are fairly good at tracing the money, we are not bad at understanding some aspects of economic growth, we are not bad at understanding how markets do or do not function, but in integrating the physical world and its dynamics with the human world we are all going to have to reconsider.

We are in the time when humans have taken over the physical earth system and appropriated 50% of all photosynthesis in this planet. What about the rest of the species? We are pushing them right off the planet. Human beings are diverting just about every river they can get to. There are sixty thousands dams in this world. Many major rivers no longer flow to the sea and this is a world wide phenomenon world wide.

But the water stress is pervasive and it is multi-faceted. Hundreds and millions of people depend on glacier melt. Snow melt is disappearing because of climate change. Hundreds and millions of people depend on fossil ground water the same way we depend on fossil fuel. Water is being mined the same way coal and oil are being mined, and it too is disappearing because of a falling water table. So we have a pervasive water crisis in many parts of the world.

The human activity has taken over the natural nitrogen cycle. How do we feed 6.7 billion people? By a heavy infusion of soil nutrients through nitrogen base fertilizers which are made with fossil fuel. We now deposit so many hundreds and millions of tons of fertilizer each year that human deposition of nitrogen is greater than fixation of atmospheric nitrogen by the microbial activity world wide and this is causing profound ecological changes around the world. The most dramatic of which are the dead zones in the estuaries where the nitrogen leaching from the fertilizers runs off into the rivers and collects in the deltas and the estuaries creating eutrophication and mass hypoxemia in the water.

Every marine fishery in the world is under an unprecedented assault because we have been taking about 100 million tons of fish from the ocean which is more than the sustainable yield. So we are depleting the fisheries with mass fish catching. These challenges are absolutely synergistic and their consequences accumulates quickly.

The essence of the climate change challenge is the loading of green house gases in the atmosphere and the most important of those is carbon dioxide. The increase of green house gases is leading to the rise of temperatures, already about a degree centigrade. Even if we did not emit one more ton of green house gas into the atmosphere, the continue warming of the oceans to catch up with the warming of the land, so called thermal inertia, would carry us another 0.7 degree centigrade warmer given what we have done up to this point. So we already put in motion a significant continued increase of global warming up to now. But we have no intention, no capacity even to stop emission today.

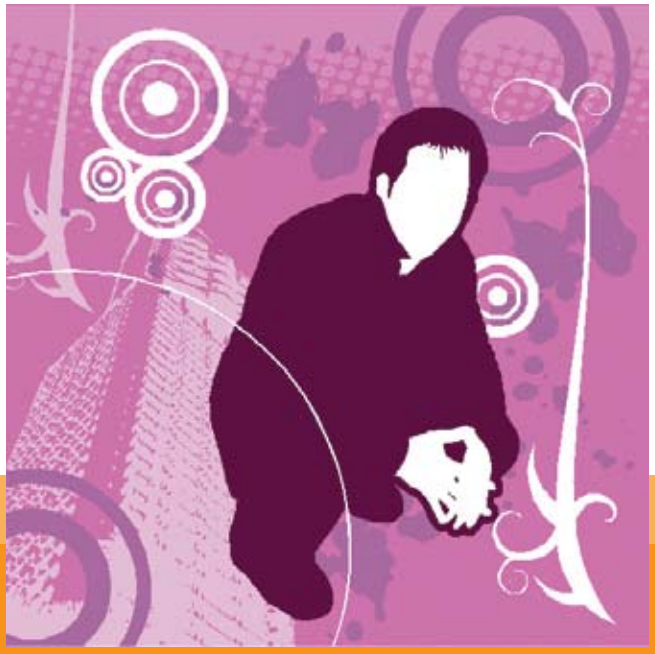
What are we doing? We are doubling up the world economy and accelerating the increase of carbon dioxide in the atmosphere. China is growing so rapidly that it is dramatically adding to the rate of carbon emission. But they are doing nothing more than catching up with us.

The vast majority, 5/6th, of the carbon emission comes from fossil fuel use (coal, oil, gas) and the remaining 1/6 comes from topical deforestation. We have to change how we live and especially how we use energy. Fossil fuel brought us to our exulted high income, high standard of living, modern technology and our current way of life. Life is very short and very tough without the advantage of modern energy and we can not view the use of fossil fuel as an evil, as immoral.

It just happens to have a deeply unfortunate consequence that we are only now appreciating and we must attempt to resolve. What would be wrong is not blame fossil fuel for our plight, but fail to address it now that we understand the problem better. We need to find a way to continue to have plentiful and low cost sources of energy because that is what gives us longevity and our living standard, our way of life that we enjoy and others inspire to achieve. We have to do it in a way which does not imply the massive emission of carbon dioxide.

We have to think practically where the carbon emission come from. They come from largely in four areas: power plants that provide the electricity (coal fire plant), our transport, mainly automobiles, when we burn gasoline to drive our cars, industrial processes, and heating and cooling of our buildings. Now what we need to do practically is find a way not to hide from these facts but to address them and to find practical approaches that can provide the energy and the services but in a way which no longer is as destructive and gets us pass the peril that we now face.

Nuclear power is a safe technology that can be used to produce electricity. We need long mileage automobile like the plug in hybrids that can get 4-5 times the mileage than the mileage our cars get now per gallon of gasoline. We need smart, so called green, buildings where a lot has been learned on how to reduce the energy demand for a



building through sophisticated system of ventilation, heating using solar power and proper orientation to air flow and to solar radiation that cuts the energy use of a building by quarters.

All of these are with in technological reach and that is the real challenge of the government and of society. All of the debate about whether to have an emission trading system of different mechanism is really secondary to this basic question of what kind of technologies we will use to fire our electricity plant, to drive our cars and to build our buildings. The market mechanism like emission trading can be a useful add-on to a smart technology policy but the core of the challenge is technological transformation.

Water is the most difficult challenge of all these challenges. As far as energy is concerned, we have alternative technologies, bio diversity we can protect, fisheries we may be able to over come through aquaculture and other means of more sustainable methods. But water, while available, is expensive to transport and convert to fresh water from sea water. Therefore places in the world that are in water stress, do not have any easy time of it and the current and worsening circumstances in those places are devastating. When we think about the Darfur crisis we should not think politics first, we should think water first. This is the big mistake of our politicians. This is not fundamentally an Islamist crisis, it did not start as political crisis, it started as water crisis and if the water crisis were not there then we would not have the Darfur disaster.

The idea that we can live with climate change, that we will just adapt another degree centigrade is completely the wrong way of judging this problem because another degree could devastate the crop, could fundamentally change hydrology. One of the fears is the drastic rise of the sea levels and extreme storm events both by melting ice sheets and by creating the basis for much more instances of cyclones. The fragile parts of the world already water stressed, already impoverished can not begin to deal with this kind of population increase.

The idea we do not talk about is family planning, contraception, helping to keep girls in school to get the fertility rates down dramatically is one of the greatest failings of our time because this dramatic boom of population can only be followed by the disasterous persistence of extreme poverty, depravation of impoverish children from large families, inability of children to go to school and environmental degradation matched by mass migration movements. Our world is not good at migration and we do not like mass unwanted migration. We are in a world that shoots people when they try to come across the border. It is not a viable response but it is definitely something that is going to be hit again by this mass population increase.

When the population is growing so fast, a vast majority of the population is very young. This is conducive to violence because of lots of unemployed young people in a crowded ecologically stressed hungry environment. Now we have a population momentum. The world is so full of young people that as they get older, they will become a larger adult population. Even if those young people today simply have the replacement rate of two children per household, we can easily add another billion people to the planet simply by this population momentum.

What is achievable is to stabilize the world population at around 8 billion people if we make a marked effort to help people to have that choice of family planning, contraception, girls staying in school, survival of children so that households have the confidence to have fewer children. It is this package which induces a rapid transition voluntarily to lower the fertility rates and this is something the planet urgently needs to accomplish. This is something that our politicians stopped talking about while ago. We need to get the word out.

There are about a billion people stuck at the bottom of the economic structure, and the first thing we need to do is to help extricate people stuck in the most extreme kind of poverty in which they die in large numbers and live lives of desperation in the midst of plenty.

The escape from poverty needs inter disciplinary knowledge like how to fight disease, how to grow food, how to collect rain water to irrigate crops, how to improve livestock, how to use information technology effectively, how to train children through distance learning or using computerization, how to use cell phones for effective health care delivery, how to use solar power at a small scale to bring electricity and modern energy to poor communities. This cross disciplinary knowledge is pivotal and it offers greatest hope for ending the poverty trap.

Our crises have solutions but they require good science. They also typically require good technology being brought to bear in a practical way: by finding the way to live harmoniously with other biosystems, with energy needs that are sustainable, with water solution and crop production systems.

We have unlocked the ability to promote economic development in all parts of the world. We have in our hands the ability to end the extreme poverty. We have before us or already existing technologies to replace dirty fossil fuel either with safe fossil fuel or with renewable power like solar power or with other large scale technologies. The question is can we bring knowledge to bear on these solutions and find a common purpose on the planet.

What is going to help us find our way through those challenges is abjectly two critical inputs. The first is knowledge. Precisely, the kind of knowledge that can bring a sustainable solution like inter disciplinary knowledge, applied knowledge, the ability to translate basic scientific insights into technologies that can improve lives, in the health care system, farm system and energy system; knowledge that can work for the poor and indeed can work for the planet.

The second thing we need is not only a technical understanding but a global understanding, a global ethic that we are all in this together and this is the challenge of our generation. It is a challenge far greater than the challenge of terrorism or Islamic extremism or civilizational divide. There are symptoms or painful evils that society has lived with through out history but the unique and unprecedented challenge of our time is managing a crowded planet. ■

89TH ANNUAL GENERAL MEETING
FRIDAY, OCTOBER 24, 2008

A. Moore

It was another successful Annual General Meeting which was held on October 24, 2008, at the Fort Garry Hotel.

The events started off with the Professional Development Conference featuring Robert Warren, I.H. Asper Executive Director for Entrepreneurship. Robert Warren spoke on the topic of 'Competition: Are We Competitive Enough?'.

Merriam-Webster's definition of Competition is "the effort of two or more parties acting independently to secure the business of a third party by offering the most favorable terms". 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?

Robert spoke on what is competition in today's marketplace, how do you measure competitive strength, who are the key players in the Manitoba economy, how do you develop competitive edge, and what can engineers and geoscientists do.

After a brief coffee break and networking opportunity, Robert Warren was joined by Andrew Swan, Minister of Competitiveness, Training, and Trade; Bob Brennan, President and CEO of Manitoba Hydro; and Rob Platford, P.Eng., Manager of Engineering and Support Services for Vale Inco, for a Panel Discussion and Questions/Answer Session.

Immediately preceding lunch, the Business Meeting was held in the Concert Ballroom with a good turn out of association members and guests. More information regarding the actions of the meeting can be found in the Council Report on page 13 of this issue of the Keystone Professional.

For the second year, the 2008 Awards Dinner and Dance had been sold out for some time, and for those who missed it, it was a smashing success.

While people mingled and talked over cocktails, Anders Magic provided an atmosphere of wonder to the night with his skillful trick of hand. As people began to get settled, Executive Director Grant Koropatnick opened the official

part of the evening and after commenting on the success of the day's events so far, introduced all special guests.

At that time, outgoing president Tim Corkery and incoming president Don Himbeault took the stage, offering up some kind words, thanking both the membership and council for giving Tim the opportunity to serve as president for the past year, and for the important opportunity for Don. Following a brief presentation, the night's award winners were introduced.

All of the winners were very gracious and thankful to the association for being recognized for their achievement, and specifically singled out those near and dear to them in their families for being so supportive to their volunteering efforts and career goals.

Following an exceptional four course dinner, the evening was turned over to Winnipeg's hottest dance band, The Ron Paley Band. As some attendees made their way to the other ballroom, some attendees stayed behind to network and to be wowed again by the tricks of Anders Magic.

In the Concert Ballroom, the lights dimmed and the music started up. A steady flow of people made their way to the dance floor to dance the night away to the timely classics that flowed out from the stage. Classic after classic kept the dance floor full right until the end, and helped provide a wonderful close to a night of celebration for Engineering and Geoscience in Manitoba. ■

Opposite page top: Robert Warren speaks on 'Competition: Are We Competitive Enough?';

Opposite page bottom: Panel discussion with (from left to right) Bob Brennan, Andrew Swan, Rob Platford, and Robert Warren.

This page top: AGM Business Meeting attendees casting their votes.

Above: Set up for the 2008 Awards Dinner.

Right: The Dance in the Concert Ballroom at the Fort Garry Hotel featuring the Ron Paley Dance Band.

EARLY ACHIEVEMENT AWARD

Jitendra Paliwal, P.Eng.

Jitendra Paliwal was born and raised in India. He earned his bachelor's degree in Agricultural Engineering from G.B. Pant University in India in 1994. He worked for one year after initial graduation and then moved to Winnipeg to pursue post-graduate education at the University of Manitoba (U of M). He earned his Masters and Ph.D. in Biosystems Engineering in 1997 and 2002, respectively. His dissertation won the best Ph.D. thesis award from the Canadian Society for Bioengineering (CBE) and another award from the Sigma Xi Scientific Research Society.

Dr. Paliwal was appointed as an Assistant Professor in the Department of Biosystems Engineering at the U of M in 2002. He has since been teaching undergraduate and graduate courses in Crop Preservation; Grain Storage; Instrumentation and Measurement; and Imaging and Spectroscopy. His research interests include development of optical and spectroscopic analyses techniques for quality and grade determination of cereal grains and food products. The analysis of data also involves development and implementation of artificial neural network techniques.

As part of his continuing research, Dr. Paliwal has already supervised or co-supervised 22 undergraduate to graduate students, research associates, technicians, doctoral and post-doctoral researchers. He has already published 23 papers in respectable/referred scientific journals and also presented results of his research in 31 conference papers.

As part of engineering community service, Dr. Paliwal, along with his research associates, has developed a number of new software routines in C/C++ and MATLAB languages. These open-source software programs are available to the research community for quality analysis and storage of grain/food products. Jitendra is also very active in encouraging and educating high school students to the study of engineering as one of the options for university education. He promotes this by mentoring students at the Manitoba Science Academy, Manitoba Science Fair, Aventis Biotech Challenge, Pfizer Medical Hall of Fame, and during the National Engineering Week.

Dr. Paliwal has been an APEGM member since 2002 and has been part of the Experience Review Committee. He has also been serving on numerous U of M faculty committees involving appointments and grant of research/scholarship funding. He is also an active member of the American Society of Agricultural and Biological Engineers (ASABE) and the CBE. He is presently serving as the Associate Editor for the Journal of Canadian Biosystem Engineering.

Dr. Paliwal's family includes his wife and two young children under the age of 4. As part of his family involvement, he has already produced 12 movies, each of about an hour duration using "Final Cut" software available on a Macintosh home computer.

In recognition of his significant contributions as an engineer, to society and the engineering profession, in the early part of his career, the Association is pleased to present the Early Achievement Award to Jitendra Paliwal.

OUTSTANDING SERVICE AWARD

Carl Anderson, P.Eng.

Carl Anderson became registered with this Association on October 16, 1962, and has been a member continuously for 42 years. Carl Anderson received Honorary Life Membership from APEGM on October 28, 2004. Carl holds a B.Sc. degree from the University of Manitoba in 1961 for Geological Engineering.

Carl served as a member of Council from 1990 to 1994, and he was President in 1993. He also served on the Executive Finance Committee for three years. Carl served on the Environment & Sustainable Development Committee for six years, the Issues Awareness Board for one year, the SPRGM-APEGM Joint Committee for three years, the Salary Research Committee for ten years, the Registration Committee for three years, the Publication Committee for one year, the Nominating Committee for four years, the Consulting Engineers Committee for one year, and the Awards Committee for three years. This makes a total of 37 Committee years of service.

Carl's commitment to the Profession and Canadian society is demonstrated by his service on Provincial and other committees related to the environment and sustainable development, as well as numerous environmental committees for the Canadian Institute of Mining, Metallurgy, and Petroleum. Carl was an Associate to the Faculty of Management and he was the "Founding Chair" of the Engineering Affiliates Program for the Faculty of Engineering at the University of Manitoba.

Over the years, Carl has contributed uncountable hours of dedicated and generous service to ensure the continued development of engineering as a career and as a self-regulated profession. He has shared his many talents and been a valuable resource to the Committees on which he has served and provided leadership to Council as a member and President.

In recognizing his commitment to the profession and to the Association of Professional Engineers and Geoscientists of the Province of Manitoba, Council is pleased to confer on Carl Anderson the Outstanding Service Award.

HONORARY LIFE MEMBERSHIP

Clyde R. McBain, P.Eng.

Clyde R. McBain was born and raised in Winnipeg, and received his degree in Civil Engineering at the University of Manitoba in 1957. Clyde became registered with the Association on April 21, 1958, and his service to the Association dates back to 1959.

Clyde joined Anthes Western Limited in 1958, and became Vice-President and General Manager in 1970. Three years later, when Anthes exited heavy manufacturing, Clyde and a few individual Winnipeg investors purchased the Foundry operation and formed Ancast Industries Limited. The creation of Ancast saved over two hundred jobs and many of the employees became shareholders in the new company.

Under Clyde's leadership, Ancast diversified and grew, adding clients from many major industries, and extending its market into the rest of Canada and the United States.

In addition, Clyde has served as a director of the Manitoba Hydro electric Board, member of the Board of Referees of the Employment Insurance Commission, and as past president and director of the Canadian Foundry Association.

For the Association, Clyde was a member of Council for four years and was elected President in 1973. He served on the Bulletin Committee for seven years, one year as Editor, the Premises Committee for one year, the Career Guidance and Counselling Committee for two years, the Nominating Committee for four years, the Executive and Finance Committee for four years, the Annual General Meeting Committee for one year, the CCPE Affairs Committee for two years, and the Awards Committee for ten years. Not surprisingly, Clyde has already been the recipient of the Association's Outstanding Service Award.

The Association is extremely grateful to him for the dedicated service he has rendered in so many areas of the Association's activities, and in appreciation is please to confer Honorary Life Membership on Clyde R. McBain.

PROFESSIONAL-IN-TRAINING AWARD

Nazra Mian, EIT

Ms. Nazra Mian graduated from University of Manitoba in 2006 with a B.Sc. in Electrical Engineering. During her studies, she was employed as Instructor and Educator with ABLE Enrichment Centre and as an Engineering Technician for Manitoba Hydro's Dorsey Converter Station. Nazra became a member of APEGM as an Engineer-in-Training (EIT) in May of 2006.

In May of 2005 she was hired by A.D. Williams Engineering Inc. During that time she worked as a Consultant together with Engineers, Architects, Clients and Lighting Suppliers on several different residential, commercial and governmental design projects. She conducted power usage optimizations, site reviews, and authored many reports. She also became interested in lighting designs with different luminaries and optics to achieve optimum light levels and enhance the effectiveness of the working environment.

In September 2007, Nazra joined Manitoba Hydro and became a member of the Business Engineering Services Department as an Electrical Systems Specialist. Her work involves the assessment of the efficiency and quality of new and existing lighting systems. This includes analysis of alternative designs using complex computer simulation methods in order to maximize energy savings and optimize project sustainability and maintainability. Nazra also participates in after installation commissioning and verification of lighting system performance and its interaction with other building systems. She is responsible for educating customers on available technologies and Power Smart incentives offered by Manitoba Hydro. She is involved in hands-on product testing for Power Smart eligibility which includes standardization of lighting audit reports, several hundred application reviews, Power Smart lighting and custom rebate calculations, as well as written ballast specifications for the commercial lighting program guide which has become a model for many other provinces' lighting programs.

Nazra was a former committee member and is now a current local vice president of the Illuminating Engineering Society of North America. She is active in a number of other associations including the APEGM Sports and Social Committee, the Energy Market Comment Planning Committee, the IEEE WIE Executive Committee, the Manitoba Hydro Professional Engineers Association, and CEATI (Cette évolution allait créer - CEA Technologies Inc.).

Nazra is also heavily involved in volunteer services. She has devoted time to the English Language Center with the University of Manitoba, her local Community Centre, Manitoba Robot Games, Operation Red Nose, and she has been an active participant in helping to organize a variety of APEGM's networking activities.

The association is pleased to present the Professional-in-Training award for 2008 to Nazra Mian, an exemplary individual, committed to her community and to her profession.

LEADERSHIP AWARD

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

Dr. Ron Britton is the Associate Dean of Design Education in the Faculty of Engineering at the University of Manitoba. Born in Regina and raised in Lang, Saskatchewan he obtained his B.Sc. in Civil Engineering degree from the University of Saskatchewan, M.Sc. in Agricultural Engineering from University of Manitoba, and Ph.D. in Agricultural Engineering from Texas A&M University.

Ron spent five years working in industry between his B.Sc. and his M.Sc. During that time he was employed by Shell Oil, the Plywood Manufacturers Association of British Columbia and Beaver Lumber. His work took him from Winnipeg to London, England and Toronto. During that time he concentrated on the design of buildings, with an emphasis on wood, and ultimately focusing on agricultural buildings.

Ron has held academic appointments at both Texas A&M and the University of Manitoba. He rose through the ranks in the Agricultural Engineering (now Biosystems Engineering) departments. He now holds appointments in both Civil Engineering and Biosystems Engineering in addition to his administrative responsibilities. In 2001, he was awarded a Natural Sciences and Engineering Research Council Chair in Design Engineering.

Professionally, he is a member and past President of the Association of Professional Engineers and Geoscientists of Manitoba, and served on the Board of Directors of the Canadian Council of Professional Engineers. He is a Fellow and past President of the Canadian Society of Bioengineering, an honorary lifetime member of the Society for Teaching and Learning in Higher Education, and a member of numerous other technical and education related societies.

Ron is a 3M Teaching Fellow and has received a number of other awards including the CCPE Medal of Distinction in Engineering Education, the CSBE Maple Leaf Award, the APEGM Merit Award and Outstanding Service Award and the University of Manitoba Dr. & Mrs. H.H. Saunderson Award for Excellence in Teaching and Dr. & Mrs. D.R. Campbell Outreach Award. During his career, Dr. Britton has authored over 30 papers published in referred journals, 12 papers published in referred conference proceedings, books, monographs, articles, chapters and has provided editorial services in books. He is a nationally recognized speaker on the topic of Engineering Design. He has been a member of the Manitoba Immigration Council from 2004 to 2007, and has supervised 41 Undergraduate and 17 Postgraduate theses.

Away from the campus Ron is a proud grandfather of four and a sometimes obsessive baseball fan. He is probably one of the few to include questions on baseball in his final exams.

In recognition of his outstanding leadership and use of scientific knowledge for the benefit of engineering and geoscience professions in Manitoba and all his contributions to the education of new generations of students and future engineers, the Association is pleased to present the Leadership Award to M.G. (Ron) Britton.

MERIT AWARD

C. Douglas Stewart, P.Eng.

C. Douglas Stewart was educated in Winnipeg at the University of Manitoba, graduating in 1980 as a Civil Engineer. He became a registered member of the Association of Professional Engineers of Manitoba on September 13, 1982. His career began at W.L. Wardrop and Associates as a Junior Design Engineer and, today, he is Wardrop's Senior Vice President and Chief Engineer.

Doug has worked on some very prominent engineering projects throughout Manitoba including the Immobilized Fuel Test Facility in Pinawa, the conversion of the Walker Distillery to an ethanol plant in Minnedosa, and the New Children's Hospital Rehabilitation at the Health Science Centre. His passion, however, is designing bridges.

Notably, these bridges include: the Taylor Bridge, which incorporated advanced composite materials and fibre optic monitoring system; the Charleswood Bridge, which was the first Design-Build-Finance infrastructure undertaken at the municipal level in Canada - the design incorporated a unique steel caisson foundation/pier system cited by the City of Winnipeg as key to reducing the overall cost and schedule duration for the project.

He was project director for the Provencher Bridge Project for which he conceived the concept and worked on preliminary design of the Esplanade Riel cable stayed pedestrian bridge. The bridge is now a showpiece and a destination of tourists as they visit the City of Winnipeg.

Doug supported the foundation and remains active in ISIS Canada research network, and was instrumental in the establishment of the Composite Innovations Centre which is located at the University of Manitoba. Over the years, Doug has worked with Wardrop staff to bring creative and innovative solutions to their engineering work. Through his presentations and reports on the use of advanced composites for civil engineering structures, fellow industry engineers and scientists have benefited greatly from its applications.

The Association is pleased to recognize Doug Stewart for his leadership, commitment, and contributions to civil engineering and for his innovations in support of structural engineering in the Province of Manitoba. He is a most deserving recipient of the Merit Award.

Kyoto Was Easy

D. Grant, P.Eng.

We have been subjected to a ten year media onslaught to convince us that humanity must reduce its greenhouse gas (GHG) production. It has been a well-orchestrated campaign. While there is some merit to limiting our use of fossil fuels, the world can only reduce its GHG output significantly with hardship and draconian leadership.

Engineers Canada was correct several years ago, to declare that adaptation to any climate change was a worthy task. If change can be anticipated, and accommodated, any harm can be minimized. If a change is for the better (perhaps a longer growing season?) we can maximize its benefit by understanding it.

Kyoto was easy. The leaders of many rich, generous countries agreed to modest limits. These limits would only be applied long after they had all left office. There were no real penalties. The 6% reductions would make no difference in the GHG in the air. The world did not leap; it was just dipping its toe into the pool.

Researchers have pointed out that far more GHG is made by nature than by mankind's activities. Those scientists who fervently believe in GHG reduction tend to ignore some obvious truths. Like the water cycle, there is a CO^2 cycle. Every gram of CO^2 taken in by plants is released eventually back to the air. The plant is eaten by an animal or a bug, or it rots in some way. The animal and plant material that falls into the deep ocean may stay there for millions of years, but then it burps back into the air, in volcanic gases.

The sad reality is that our planet has two great climatic instabilities.

1. When the place gets very cold, it gets snowy. Then the place gets much less warming from the sun. Then it gets even snowier.
2. When the place gets warmer, more stuff rots. This rot makes mostly methane and CO^2. If mankind were to disappear now, this increased rot would keep GHG levels increasing for many decades. If temperature climes, one degree warmer means a few percent more rot per year. There is a lot of food out there for the bugs of the world.

GHG reduction advocates say that we need to reduce GHG production by 85% worldwide in a few years to make a difference to our climate. If you believe that the GHG in the air has warmed the place, and if you ignore the 'rot-factor' you really should think about what the world would be like with only 15% of our current level of GHG production. Think Robin Hood's village without the firewood. Tropical grass hut with wires from a hydroelectric plant and a vegetable garden. No room for a network of daily jet flights, or for 15 billion rich-people. Colder regions like Manitoba would have to be de-populated. ■

Don Himbeault, P.Eng.

Meet Your New President

P.H. Boge, P.Eng.

"How can I best serve my association?"

That was the question Don Himbeault, P.Eng. asked himself, and the answer came in the form of being president of APEGM.

Don graduated from the University of Manitoba with a degree in mechanical engineering. He then went on to obtain a doctorate in the same discipline at the University of Waterloo.

Don has worked with National Defence as a Defence Scientist studying armour systems and shaped charges, Atomic Energy of Canada Limited, Whiteshell Laboratories studying CANDU pressure tubes, and Revenue Canada as a Research and Technology Advisor reviewing and assessing the technical and scientific content of R&D tax credits applications.

His current position is Senior Manager, R&D Tax with Deloitte & Touche. Don helps companies in preparing the technical report submissions required when applying for funding through the Federal Government's SR&ED Tax Credit Program. So even though he works with accountants, his job is primarily working with the engineers and technologists of his firm's clients.

When asked about the current challenges facing APEGM, Don says "The biggest challenge for APEGM is to be aware of all the upcoming changes that are happening about us, recognizing which are important with the potential to affect us, and taking the appropriate action. A good example is with respect to mobility, where efforts started over ten years has put us in a strong position with respect to legislative framework currently being proposed on trade mobility. Similarly, APEGM, together with the University of Manitoba, has been a leader in the area of registration of foreign trained professionals with the development of the IEEQ program, now being used as a model for other associations and professions that are seeing the number of these applicants grow."

One of the ways Don hopes to address the challenges is to focus on government relations. "As identified in an earlier strategic planning session of Council, government relations was chosen as one of Council's priorities. By engaging with government, this would be one of the ways we can become aware of what government is thinking in terms of new or changing legislation and regulations. Past efforts have included a presentation by APEGM to the Caucus, and meetings with government advisors from key ministries. Council also has many other tools at hand to address this challenge, such as committees and input from the membership."

Don was born and raised in Winnipeg. He and his wife, Gisele, have two sons, one enrolled in Physics and the other in Computer Science. Don likes to remain active either through cycling, cross-country skiing, or canoeing. He also likes cars and is currently "restoring" a 1954 Austin with the aim of converting it into an electric vehicle. He's in the market for a shift lever for a four speed manual transmission from an '83 Chevette, so if anyone can help him out, please let the office know!

A big welcome to Don Himbeault. Thank you for becoming our president. We look forward to working with you. ■

Meet Your New Councillor

A. Kempan, P.Eng.

Rick Lemoine, P.Geo., is Winnipeg-born and raised, and even after living here for 47 years, he is still discovering new and fascinating things in his home city. For example, only recently did he find the Red River Channel Catfish, after being an avid, long-standing fisherman and outdoorsman for ages. The Channel Catfish is common in the Red River and has a large population of 20lbs plus specimens for fishermen like Rick to catch.

Rick earned his B.Sc. Hons. Geology from the University of Manitoba in 1984, and followed that with an M.Sc. in Geological Sciences from the same institution.

Rick has had a diverse and interesting career, having worked on projects all across Canada in mineral exploration, mining, geophysics, and the petroleum industry. His employers have been Atomic Energy of Canada, Hardy BBT (later HBT Agra, AGRA), KGS Group, and Manitoba Environment (now Manitoba Conservation.) Since 1997 Rick is the senior Advisor of Site Remediation for Alberta, Saskatchewan, Manitoba, and NW Ontario for Petro Canada.

On the professional side, Rick received his P.Geol from Alberta in 1996 and his P.Geo from APEGM in 1999. His activities in APEGM have been numerous: Chair of Subcommittee on Professional Registration of Geoscientists in Manitoba, the Environment & Sustainable Development Committee, and the Investigation Committee.

In keeping with his love for the outdoors, Rick is an outstanding athlete and golfer. He proved that with consecutive wins in the APEGM Making Links Golf Tournament. He's been inducted into the Manitoba Baseball Hall of Fame, along with two brothers, so he is no one-sport athlete. He coaches basketball, curling, and baseball. Recently he's taken up martial arts as a means of staying sane and fit.

His less strenuous activities include vacations in Mexico and reading, although he doesn't read as much as he used to, or as much as he'd like. Rick is married to Janet and they have two children, Natalie and Ryan.

Rick, welcome to Council. ■

Jeannette Montufar, P.Eng.

Meet Your New Councillor

C. McNeil, P.Eng.

Dr. Jeannette Montufar is an Associate Professor of Civil Engineering at the University of Manitoba. She is also the founder of Montufar & Associates, a consulting company specializing in freight transportation and road safety.

Dr. Montufar received a Bachelor of Science in 1994 and a Master of Science in Civil Engineering in 1997 from the University of Manitoba, where she also received her Ph.D in 2002.

Dr. Montufar is a past winner of the Canadian Council of Professional Engineers (CCPE) Young Engineer Achievement Award (2004). She was the first engineer in Manitoba to receive this prestigious award.

Her professional and research specialties include freight transportation, traffic information systems, and road safety (focusing on older pedestrians). Her focus on safety was recognized with a research fellowship (2004) for her research on "The Safety of Older Pedestrians in Winnipeg" from the University of Manitoba Centre on Aging Research.

Dr. Montufar is a member of numerous professional associations including the Institute of Transportation Engineers (ITE), the Transportation Association of Canada (TAC), the U.S. Transportation Research Board, and the Canadian Association of Road Safety Professionals (CARSP). She is the current secretary/treasurer of the Canadian Institute of Transportation Engineers, and a past board member of CARSP. She is also the Faculty Advisor and an active participant in the University of Manitoba's ITE Student Chapter. This Chapter is very active in community service, professional and technical events, student development, and outreach. Under Dr. Montufar's guidance, the Chapter has been awarded the prize for top ITE Student Chapter in Canada four times since its formation in 2003.

Jeannette is a very active member of the Winnipeg community. She does volunteer work with teenagers at risk to encourage them to stay in school. She volunteers with the Winnipeg International Centre, mentoring new immigrants (especially those with Engineering Degrees) to help with their integration into Canadian Society.

Dr. Montufar is married to Luis Escobar, P.Eng, who is the Traffic Signals Engineer for the City of Winnipeg. They have one child, 7 year old Victoria.

As part of the APEGM Council, Jeannette will focus on issues dealing with financial compensation, professional development, human capital retention, and encouraging the registration of qualified graduates from other institutions and jurisdictions with the Association.

With her professional experience and past board member experience, Dr. Montufar will be an excellent addition to the APEGM Council. ■

Cindy Rodych

Meet Your New Councillor

R. Foster, P.Eng.

Cindy Rodych is a new addition to APEGM Council. Cindy holds Bachelor Degrees in Interior Design and a Masters of Facility Management from the University of Manitoba. She is currently Vice President of Stantec Architecture, covering all of North America.

Cindy began her career in Vancouver with a large Architectural firm, working on Expo facilities and the Vancouver Trade Centre. She moved back to Winnipeg in 1987 and worked for two of Winnipeg's major Architectural firms before going to Stantec Architecture in 2004. In 2005, she was named a Senior Principal and shortly thereafter a Corporate Leader and Vice President. In this position, Cindy has responsibilities in business development, management of major contracts, strategic planning, and is constantly working to raise the Firm's level of professionalism.

Cindy is a working Mom with two daughters and two stepsons. In what little spare time she has, she enjoys doing pottery and making jewelry.

Cindy believes that one of the most important issues facing the design professions is that the built environment is changing, becoming more and more sophisticated, particularly in terms of sustainability. We professionals have a responsibility to guide our clients in making appropriate decisions to incorporate environmental stewardship in our designs.

Cindy will bring a broad knowledge base to the APEGM Council table. She has worked with engineers and commented that "engineers have been some of my best teachers". We professionals must engage more in each other's disciplines and strive to understand each other better, in order to advance our professionalism and provide a better service to our clients. ■

Please welcome new Council members Don Spangelo and Shiela Dresen who will be featured in the Spring 2009 Issue of the Keystone Professional.

Teshmont Consultants LP is an internationally recognized engineering services provider in the EHV AC and HVDC power transmission systems sector, and in Pep Talks we will be talking with Mr. Roy Vallance, Vice President, Engineering Design of Teshmont. Mr. Vallance was born and raised south of London in UK. He graduated from the University of Nottingham and then moved to London to work for the distribution utility. He remembers the day he was talking to a colleague who had recently applied for and got a job in USA with a consulting outfit; that seed did not take root immediately, but he thought about it over a period of time and thought it would be exciting to do something like that. That was the first idea he had of emigrating. Instead of the USA he considered Australia and New Zealand, but Canada was closer to home and made a lot more sense, and after coming here he never looked back.

At his office on Waverley, Pep Talks asked Mr. Roy Vallance (RV) – why did he choose engineering instead of sports or any other profession where there is so much glamour, fame, and media coverage?

RV: Good question. I have never been one to look for the spot light. I came from an engineering family; my dad was in the engineering business and when I was a kid I spent a lot of time playing with Meccano (a structural building toy with all shapes of metal beams, columns and plates that one connected together with nuts and bolts). Meccano was my favorite toy and I built up quite a set over the years and my family used to say "Here is another engineer in the making." So following in Dad's footsteps had a lot to do with it and my family had a mind set. I was fascinated by aircraft and things like that. So engineering really was something that I thought a lot about and it turned out that at school I was good at math and science, so I went through engineering school in Nottingham and never regretted that.

Pep Talks: Why did you move to the consulting industry even though you started your career in utility?

RV: I was in that utility for a few years before I moved to Canada. In the utility I looked around me and I saw a lot of old guys who did not seem to have done very much with their lives, well that was the impression I had, and I remember thinking I wanted to do something exciting with my life. I did not want to end up at their age and have regrets that I could have done such and such but never did. So that was the motivation for me. I had a little interaction with consultants when I was in the utility, and these people were very highly thought of. I thought, to work for a consulting outfit that I could be really proud of would be exciting, doing work like these other guys I had seen. I was excited to come here and get a job in consulting.

Pep Talks: People like Bill Gates and Meg Whitman are worried about our future as enrollment in math, basic science, and engineering are declining. As a VP of Teshmont, what do you think of it and how it will shape your company in years to come?

RV: This is certainly a big concern but I think we have to act before it becomes a crisis. We are surrounded by engineered products and they affect all aspects of our lives. So we need to deal with this and we at Teshmont are getting involved in trying to avoid this crisis. Teshmont specializes in high voltage power transmission and we depend on bright young graduates for sure. Engineering schools in North America are turning out too few power engineering graduates while India and China turn out infinitely more. So we need to fix things in North America by targeting young people before they get too far with their career planning and we are taking steps in that regard.

Pep Talks: How we can make engineering lucrative and glamorous to the brightest young generation and what initiatives is Teshmont has taken to do so?

RV: Engineering salaries are largely market driven and with fewer engineers relative to requirements, according to economics, the price should go up, and we see signs of that happening and have done that for the last little while. So that is a good thing for us, but of course the owners of engineering projects are taking steps to try and keep the price under control. Obviously to attract bright people who have choices, we have to offer the right price if we are going to get them to join us.

As far as making engineering look more glamorous is concerned, I do not think the engineering profession has

done enough in the past to deal with this but steps are being taken now for sure. For example the Consulting Engineers of Manitoba (CEM) have a committee called the Image Committee of which our president is the Chairman. Their job is to improve the engineering image in the community at least as far as consulting engineering is concerned, and one of their initiatives is the introduction of awards where companies within the province are invited to submit projects for consideration in different categories For example, local projects like the Winnipeg Floodway, the Manitoba Hydro new headquarters building, the new airport building and many other projects, as well as international projects. Awards made are publicized in the press; submissions consist of displays which are then put in public places as information for the general public and to make the public aware of the impact of engineering in their lives. APEGM is also involved through the Public Awareness Committee in which we also have some involvement. We also have individual staff members who get involved in activities making people aware of what we do as engineers, and targeting young people to help them in their career planning.

Pep Talks: Human nature as looking for a reward for its hard work, wants to be recognized which motivates humans to be creative and do something for society. How can we ensure that those hard working engineers who make a difference in our society are getting recognition?

RV: That is a very good point. What do people look for in a job? It is not just financial reward; it is a factor but it is not the most important factor. Engineers need to be appreciated for what they do and they need recognition. Engineers need to know what is expected of them and they need to have the opportunities and the tools to be able to shine, and grow in their careers. These are very important factors. When I started out in my career, things were different, but generations change from one to the next. We do our very best at Teshmont to provide engineers with these things I mentioned because we want this to be the best place for engineers to work. We do not want to train people up and have them leave.

Pep Talks: The world is so inter-connected that the playing field becomes flat and competitive. To stay in competition with only a engineering degree is not enough. One needs inter-disciplinary skills and knowledge, liberal education, and knowledge about society which is unknown. Do you think that our education system addresses that issue and our young generation has those qualities?

RV: Back in the days when I was in university, we were rewarded only for academic achievement. By the time my kids got to school, I saw that big changes had been made and I see that, for example, students are rewarded for community service they get involved in. Also, when I was in university, the brightest were not those that had the most rounded personalities because they were so focused on the academic; but now the system has broadened its focus, and I see the effect as very good. I see very talented people who are not only good academically but also have very good soft skills. In the consulting business, this is really important because one gets involved in so many facets of the business because of the relatively small companies that we have in Manitoba. This wide range of talents is really necessary and I really appreciate the way the young people are broadly skilled.

Pep Talks: Scout movement, the Red Cross, and the Peace Corps do not attract kids anymore. The young generation's participation in classical music, orchestra, opera, or any other cultural activities is negligible. How can we raise that kind of kid that society needs?

RV: I think these days, all organizations have a hard time attracting people and it is a function of the business of people's lives. They do not want to be tied down to organizations but I do not think that society is degrading; I just think that it is changing. People always look at the next generation and tend to think they are not as good as their generation, but it can not be true, because, in general, humanity is improving over the centuries. You know, it always amazes me that engineering students have always been regarded as wild, rebellious people but as soon as they start working they turn up in a suit and tie (at least on their first day) and curb that wildness and rebelliousness. We find that when new graduates join us, they are good, productive people and they do not have to be reprogrammed. So the system that produces them must be pretty good.

Pep Talks: In an interview with a TV channel a group of university students from Singapore who extensively travelled North America were asked which part of our society they dislike and do not want to imitate in their life. They responded, "Individualistic mentality; ignorance about rest of the world especially in society to society engagement in solving problems like poverty and climate change; money and affluence being the driving force of the society undermines moral and social values; more kids growing up without parental love and education; relationship and respect among individuals". What would be your response in this case?

RV: We are talking about culture and Canada has its own culture. This Canadian culture is the sum of all cultures within the country. We have a Manitoba culture and we have a Winnipeg culture. Companies within Winnipeg have their own culture. In Teshmont we work hard on our culture, because we spend more time at work than with our family generally. So we want this to be a pleasant place to work and we want to have a good culture.

So to address the complaint of individualistic mentality: we are all individuals, we have to recognize that. We have our own personalities and talents but we all have to work together

towards a common goal, so team work is really important. The goals primarily in this company are to deliver successful projects to satisfied clients, and to strive to make the company an even better place to work. A very important part of that culture has to be mutual respect and, being an international company, we have great opportunities to see the world and to cherish what we learn. We are continually interacting with clients in different cultures, in different countries, and we appreciate these opportunities. When we travel, we see the problems you mentioned, like poverty, the effects of climate change and so on. I do not think it is possible for any of us to observe these things without reacting positively in our own individual ways.

As we discussed a little earlier, it is a fact that for most people, money is not the most important factor in our choice of employment. In this company we have an extremely high proportion of immigrants, mostly new immigrants, and we have a higher proportion than average in our industry of women in technical roles. People here are valued for who they are and what they contribute, regardless of their gender and background. This is the culture that we have created here, it's our contribution to Canadian culture, and we value this.

Pep Talks: Former eBay CEO Meg Whitman says, "Government and Crown do not create wealth" and Silicon Valley entrepreneur Richard Elkus says, "Competitiveness shapes the fate of a place". That means we need a highly competitive private sector which will challenge the engineers to innovate. In this perspective, how you see Winnipeg in the global arena?

RV: The young people that we hire at Teshmont know that they are entering a highly competitive company in the private sector. We try to hire people who thrive on challenges, who like to compete, and have a somewhat entrepreneurial spirit . We have a ping-pong table in our lunch room where we see competitiveness at coffee breaks and at lunch time. These qualities make our company strong.

Teshmont's business is high voltage power transmission and our core business within that is high voltage DC transmission. When we started off forty years ago it was a fairly new technology but it is now a mature technology with lots of competition. Winnipeg is a small city of only about six hundred and fifty thousand people, but in Winnipeg alone we have got seven companies that work in this HVDC technology field. So you could perhaps look at it as a mini-Silicon Valley.

Pep Talks: One of the main reasons of absolute declination of Chinese economy was to close its society to international ideas and trade. International ideas induce in a society through internationally educated people. But here in Winnipeg we are reluctant to recognize internationally educated engineers and instead of engaging them and taking advantage of their knowledge, we put barriers up in hiring them and send them to school to validate their education. Why we are so protective when the competition for talent narrows down from province to province, company to company? Are we scared of losing our jobs to internationally educated engineers?

RV: First of all I do not believe that we are being over protective; we at Teshmont know that we need immigrant experience and the government recognizes that, and is planning to bring a larger number of immigrants to this province. We in the engineering profession need to make sure that our practising engineers are properly qualified, that is very important. I see signs that it is getting a little easier now for new immigrants to get registered in Manitoba and I applaud that. It has long been recognized that it is easier to get registered in some provinces as compared with others and Manitoba is not the easiest province to get registered in. According to people I know who are in the business of helping new immigrants settle in Manitoba, the engineering profession is actually ahead of most of the other professions in recognizing foreign credentials. I know other companies are generally not quite as liberal-minded as Teshmont and they will often say to new immigrants, "When you get some Canadian experience then come back and see us." The new immigrants are frustrated with this. They ask "How am I going to get Canadian experience if you do not give me a chance?" I hope the word is spreading faster that new immigrants have talents that they can bring to our businesses for our mutual benefit.

Pep Talks: Good leadership is a key to any institution and a good leader is someone who allows others to prosper. How do you define your leadership?

RV: Lord Montgomery, affectionately known as "Monty" was a WW2 British Field Marshall, and I like his definition of leadership. He said, "Leadership is the capacity and will to rally men and women to a common purpose, and the character which inspires confidence". Leadership is about bringing out people's talents. It is about having defined goals to aim at. It is about making people feel good about themselves. It is about maintaining a positive attitude and being excited about what we do. We all have strengths and weaknesses, and a leader maximizes the strengths of people around him and covers for their weaknesses. So we all discover and maximize our talents. I think that is what leadership all about.

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

RV: I have two pieces of advice actually. I think we all should make the most of each day; even if we are doing something mundane, we should do our very best, and expect our efforts to be noticed. I think we have to learn as much as we can, we have to develop our skills, discover our talents and develop them, and expect to be rewarded accordingly.

Pep Talks: Thank you very much for your time. ■

Detach page for posting

The Brown Sheet

Big Dig - Ethics of Failure, the Boston Central Artery/Tunnel Project

Case Study – Approach to Ethics Education

For all engineers an understanding of the subject of engineering ethics is key to guiding appropriate decisions. While most ethics is common sense it needs to be set in the context of a failure to be effective. The case study approach is an attempt to provide this context.

In recent history, the failure of a large suspended concrete slab in the I-90 extension to Logan Airport in 2006 is a classic example of multiple mistakes at several levels. In an age of transparency much of the real documentation is available – from the Massachusetts State Trooper's report of the accident to the independent testing of the fastening systems that led to the accident.

Using these real documents, the speakers will provide a ½ day seminar to educate APEGM members on the importance of ethics in engineering.

More information can be found on the APEGM website.

Date: January 20, 2009

Cost:
$50.00 includes coffee break and lunch

Location: Canad Inns Fort Garry, 1824 Pembina Highway, Winnipeg, MB

World Class Performance and Measurement

The course, instructed by Andrew Hildebrand, will cover the body of knowledge relating to World Class Performance and Measurement. Principles, concepts, and tools associated with Lean Manufacturing are included. Manufacturing type businesses are the main beneficiaries, however, the course content is widely applicable to all companies everywhere.

For more information: call (204) 474-9457, visit the website umanitoba.ca/extended or contact Student Registration and Records at (204) 474-8016

Date: January 24 & 31, 2009

Time: 8:30 a.m. - 12:30 p.m.

Cost:
$380.00 Registration

Location: The University of Manitoba Downtown: Aboriginal Education Centre, 11 The Promenade, Winnipeg, MB

Annual Networking Dinner

APEGM's Annual Networking Dinner is held to help encourage student engineers and geoscientists to become more involved in their profession before graduation.

The dinner features a delicious meal, presentation by Ken Cooper, P.Eng., and activities to encourage interaction between the students and professionals.

The Networking Dinner is a great way to promote yourself and your company and support the future of engineering and geoscience in Manitoba.

Sponsorship opportunities are available through the APEGM office. Please contact Angela Moore or Jenna Tenszen at 474-2736 for more information.

Date: January 29, 2009

Time: 6:00 p.m. - 9:00 p.m.

Cost:
$75.00 Registration
$275.00 Table Sponsor

Location: Canad Inns Fort Garry, 1824 Pembina Highway, Winnipeg, MB

Understanding Environmental Regulations

The environmental "command and control" compliance philosophy continues to dominate the government policy agenda. The only way to avoid liability for non-compliance is to thoroughly understand regulatory requirements.

This course enhances your knowledge and skills by increasing your understanding of current environmental compliance issues. It deals with the current regulatory environment in a variety of jurisdictions, environmental management systems, liability and the interrelationships among federal, provincial, and municipal agencies. The regulations are described and references for information provided. Emphasis is then on the application of regulations in the various areas of concern to industry.

Date: February 9 -11, 2009

Time: 8:00 a.m. - 4:35 p.m.

Cost:
$1695.00 Early-Bird
$1865.00 Regular

Location: Holiday Inn Airport West, 2520 Portage Avenue, Winnipeg, MB

PCSWMM.NET & SWMM$_5$ Workshop

Become proficient with two new, major modeling software packages that will enhance your stormwater drainage and sanitary system modeling and design. In two days of hands-on workshops, you can learn the new US EPA's Stormwater Management Model (SWMM5), and the newly-released PCSWMM.NET graphical decision support system. Attend this comprehensive workshop to gain expertise in this next generation of modeling software tools, and evaluate how this scaleable, integrated and open tool set can improve your current modeling work.

For more information, see the website www.computational hydraulics.com/Training/Workshops/torontoworkshop.html

Date: February 17 - 18, 2009

Cost:
$945.00 Registration

Full-time students are entitled to a 1/3 discount

Location: Toronto Airport Hilton, Toronto, ON

Infrastructure - Concrete Plactice & Placement

ACI Conventions provide a forum for networking, learning the latest in concrete technology and practices, and renewing friendships and/or establishing new ones.

In San Antonio you'll have an opportunity to give input on concrete industry codes, specifications, and guides when you attend some of the 300+ committee meetings open to all convention attendees.

Additionally, there will be over 35 technical and educational sessions open for you to attend. Don't miss this opportunity to listen and learn from some of the concrete industry's most knowledgeable individuals.

Convention highlights include: "A Night in Old San Antonio" themed Concrete Mixer, CMC Texas Technical Tour, Opening Session & Awards Program, and an Opening Reception.

For more information, see the website: www.concrete.org/ Convention/Spring-Convention/Front.asp

Date: March 15 - 19, 2009

Cost:
$332.00 ACI Member
$438.00 Non-Member

Location: Marriott Rivercenter, San Antonio, TX

New Members Registered August, September, & October 2008

A.F. Aboulazm
M.M. Ahsan
V.J. Anderson
C.T. Armitage
T.A. Avann
M.E.C. Barbosa-Meyer
P.D. Blanchard
Z. Bodiroga
A.L. Brooks
S.H. Carroll
E.L. Chant
L.J. Chaput
S. Charitonos
R.D. Cook
P. Da Silva
S. Das
R.H. Davidson
J.P. Dhaliwal
H.D. Diederichs
D.O.I. Domke
M.-A. Dubois
J.D.P. Fedirchuk
M.A. Fenwick
A.K. Folkesson
J.D. Fontaine
J.S. Friesen
B.D. Frost
G.A.F. Fuga
J.R. Funk
A. Gamaley
R.E. Gasper
J.D. Groshak
T. Guglielmi
A.C. Gupta
S.W. Hay
C. He
C.L. Helman
G.K. Hiscock
K.E. Howie
D.M.C. Huminicki
P.W. Ilasewich
E. Jalayeri
A. Khosravi
J.B. Klumpenhouwer
T.J. Kopp
A.S. Kotula
P. Kulba
S.G. Lambert
R.G. Lauder
G.C. Loeppky
T.R. Lytwyn
L.M. MacBride
C.D. Malette
B.H. Maller
S.M. Matheson
J.D. McFarlane
F. Mei
J. Mihaila
S. Mitra
D.K. Morris
L.S. Morrison
A.J. Muzyczka
R. Natarajan
B.M. Oliver
B.F. Pearson
J.G. Peterson
L.D. Pitts
J. Planinich
D.L. Post
M.A. Rahman
P.L. Regier
L.A. Reid
P.T. Reid
C.A. Richard
M.J. Robb
C. Robertson
K.W. Savage
D.M. Shiskowski
S. Soltani-nasab
J.A. Steenhof
J.K. Steeves
I.M. Teodorescu
M. Tomov
R.D. Topping
V. Varma
A.S. Wahabi
K.W. Wallace
C. Weerakoon
G.J. Weisbrod
A.M. Weiss
Y.D. Zhu
A. Zivkovic

Members-In-Training Enrolled August, September, & October 2008

K.K. Adane
M. Agelinchaab
J.A. Aguirre Pineda
N. Alegria
B.A. Assefa
A.J. Baker
H. Batenipour
T.P. Baumgartner
J.A. Berke
A. Birur
D.L. Bockstael
M.D. Booth
R.M. Bouchard
D.E. Butterworth
P.R. Caguia
K.W. Chody
A.K. Choy
I.A. Cohen
J.J. Corden
S.H. Corden
S. Davidson
C.B. de Ala
R. Djukic
J.C. Drabik
A.M.F. El-Shaboury
D.P.M. Falk
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J.G. Foord
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P.K. Ghosh
M.S. Gill
A.J.E. Grierson
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J.A. Gylywaychuk
N. Haider
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S. Hu
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G. Jankovic
N.K.A.S. Jayasekara
S.S. Kaisare
S.L.A. Kennedy
P. Khanna
L.H. Koebel
A.B. Kosowan
I.I. Kovacevic
S.M. Kovnats
J.K. Krut
T.R. Lavallee
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K.K. Qin
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S. Rastgari
A.S. Rivers
H.N. Robinson
L.E. Robinson
E.J. Ross
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K.S. Shymko
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P.M. Smerchanski
T.A. Stadnyk
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W.C. Thong
S.L. Tully
S.K.V.B. Tummalapalli
D.P.J. Turner
C. Vellaichamy
V.A. Voodi
M.L. Wadelius
C.G. Walrond
X. Wang
D.R. White
A. Widecka

Certificates of Authorization August, September, & October 2008

AMPS Services Inc.
Amstel Engineering Inc.
Caber Engineering Inc.
CCP Geosolutions Inc.
Chant Construction Limited
CMA Engineering Inc.
Fransen Engineering Ltd.
G.D. Newton & Associates Inc.
George Third & Son Ltd.
Hydro ECI inc.
Interstates Engineering
Klohn Crippen Berger Ltd.
KT5 Aeronautical Inc.
Mallot Creek Associates Inc.
Mayberry Engineering Ltd.
Sandwell Engineering Inc.
Skyward Towers Inc.
Topping Engineering Ltd.
Wiebe Environmental Services Inc.

Date: Thursday, June 18, 2009 @ 12:00 p.m. BBQ lunch will be served at the clubhouse starting @ 11:00 a.m.

Place: The Links at Quarry Oaks, Steinbach, MB Ph: (204) 326-4635 ***Format:*** Texas Scramble, Shotgun Start

Cost: $195.00 per person (includes BBQ lunch, 18 holes of Golf, Cart, Dinner, and Prizes) or $750.00 per team of 4

The first 220 registered golfers with accompanying payment will play. Entries and payments are to be submitted to the APEGM office by 4:00 p.m. Friday May 22, 2008.

Contact the APEGM office at 478-3727 for more information and registration

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