

THE KEYSTONE PROFESSIONAL

Spring 2007

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Best Practices for Selecting
Consulting Engineers

Manitoba's **New** Occupational Safety
and Health Regulation - **Highlights**

Scope of Practice:
Engineers and
Architects

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Association of Professional Engineers and
Geoscientists of the Province of Manitoba
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THE KEYSTONE PROFESSIONAL

Spring 2007

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- The Communications Committee would like to hear from you.
- Comments on your newsletter can be forwarded to us through the Association office. Members are also encouraged to submit articles and photos on topics that would be of interest to the membership.
- Although the information contained in this publication is believed to be correct, no representation or warranty, expressed or implied, is made as to its accuracy and completeness. Opinions expressed are not necessarily those held by APEGM or the APEGM Council.

Front cover photo by Barry Strierner, "Winnipeg Old & New"

The Esplanade Riel has quickly become one of Winnipeg's most recognized landmarks. This view of the new bridge, also captures one of Winnipeg's oldest landmarks, the ruins of the St. Boniface Cathedral.

Barry Strierner is a Winnipeg based photographer concentrating on urban, landscape and nature photography in the digital format. Fine art prints are available of Barry's photographs and he can be contacted via E-mail at bstrierner@shaw.ca

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Robyn L. Taylor, P.Eng. PMP
President's
Message

WHY DID YOU CHOOSE ENGINEERING?

The mission of APEGM is to serve and protect the public interest by governing and advancing the practices of professional engineering and professional geoscience. That being said, I believe that we, as an Association, can provide the public with more information regarding our professions. One way that this can be achieved is to focus on students, who are willing to learn from and be molded by involved parents, teachers, and professionals.

I'm often asked by students, "Why did you choose engineering?"

There are many factors that led me to choosing a career in engineering. My grandpa was an electrician. He would have been a great engineer, but the

circumstances of the war didn't allow him to attend university. I can remember checking wiring around the house with him, and that he always had an answer to every question that I asked.

When I was in high school, I enjoyed math far more than English classes, so it seemed logical that I at least consider engineering as a career. This was reinforced by an enthusiastic group of University of Manitoba engineering professors when I attended the Rotary Career Symposium. I enrolled in engineering soon thereafter, and have never looked back.

It's important to encourage students to continue with their education and, if possible, to become engineers or

geoscientists. The focus should be to show young people the relevance of these professions in all of our lives, and that a diverse set of skills is required, in addition to an interest in math and science.

Can you think of your reasons for deciding to become an engineer or geoscientist? I'm sure we all have stories that could inspire upcoming generations of students to become engineers or geoscientists. And by sharing those stories, we can help guarantee the future of our professions in Manitoba.

I look forward to your questions and comments, and can be reached by mail or fax via the APEGM office, or by e-mail at rtaylor@teshmont.com. ■

NOTICE

Nominations for Election to the APEGM Council

The Nominating Committee of APEGM requests recommendations from members and members-in-training, for nominees who they consider to be qualified to participate in the governance of the Association and who are willing to so serve the engineering and geoscience professions in Manitoba. There will be three professional engineer positions and one professional geoscientist position to be filled as of October 2007.

The Committee will consider recommendations received by the secretary up to the close of business on Friday, September 14, 2007. In the event insufficient recommendations are received, the Committee may exercise its prerogative to put forward a slate of candidates for election that is equal to the number of positions to be filled. Persons submitting a recommendation are required to obtain the consent of the professional member being recommended and to provide a curriculum vitae or biographical sketch.

Members can also be nominated directly and be on the ballot for the 2007 election by the completion of the prescribed nomination form. The form can be obtained from the Association office or from the website at www.apegm.mb.ca/practice/infomem/nominations.html. The consent of the nominee must be obtained.

Grant Koropatnick, P.Eng.
Secretary of Council

Engineering Philosophy 101

... is the foundation cracking?

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

In Canada, professions are “regulated” under provincial or territorial legislation. The “Coles Notes” version of the theory behind the existence of “regulated” professions is that those who practice in a specific professional area are seen to be most qualified to regulate that profession on behalf of the public.

Thus, assuming that the public requires protection against those who would claim to be something they are not, the provincial/territorial governments have, on behalf of the public, enacted legislation giving “professionals” the right, and responsibility, to “regulate” their professions. The logic seems sound.

Functionally, this mandate has produced as many as 13 different pieces of legislation for each profession, and therefore up to 13 different sets of location specific “rules”. So, if one wishes to practice in a specific province/territory, one must be registered in that province/territory, and comply with that set of regulations. Depending on the nature of the profession in question, this may or may not be a major concern. It is, however, a major constraint on mobility.

The Engineering profession has responded to the problem of provincial/territorial “regulation” in an increasing national work environment by creating the Canadian Council of Professional Engineers. CCPE serves to provide a national perspective on behalf of the provincial/territorial Engineering Associations/Ordre that “own” it. The Council has no legal status with respect to licencing, but it provides a clearing house for discussion of national issues.

Working groups like the Canadian Engineering Accreditation Board and the Canadian Engineering Qualifications

Board provide uniform national standards that all engineering licencing bodies can use as they carry out their respective legislated mandates.

While it would be naive to assume that everyone agrees with the concept of professional “regulation”, it would also be unfair to suggest that the process is not working reasonably well within the Canadian Engineering profession.

Thousands of volunteer hours are spent providing the input required to deliver on our mandated obligations. The anonymity we often decry is an indication that we, as a group, are “watching the shop”. By and large, our profession is held in relatively high regard by those whom we are required to “protect”.

Unfortunately, there are those who see the licencing bodies as “closed shops” that exist to restrict access to “the club” and thereby inflate the “cost” of engineering services. Indeed the concept of paying to belong to an organization that imposes constraints on what one can do and how one can do it is not widely accepted in today’s “me” society. And that raises storm clouds on the horizon of professional “regulation”.

In recent years there have been “causes”, both visible and hidden, that threaten the concept of professional self regulation. Public outcries in response to newspaper reports on structural failures and leaky condos have caused politicians in some provinces to enact legislation requiring those who work in the building industry to obtain special “certification” by passing provincially/municipally administered tests on building codes.

Concern over problems associated with the registration of internationally-educated engineers has led to the enactment of legislation addressing “fairness” in the licencing process. In both cases, this new legislation challenges the right of engineers to determine who is qualified to practice engineering.

In neither case does it respond to the original assumption that those within a profession, those who understand that profession, are best able to “regulate” that profession.

Maybe this type of legislation has its roots in our Associations/Ordre failing to carry out our responsibilities properly. Maybe it has its roots in a desire on the part of politicians to be seen as being proactive on behalf of their constituents.

Maybe it has its roots among individuals, or groups of individuals, who simply disagree with professional self regulation and see this as a means to weaken a concept they disagree with. But whatever the roots of the situation, it is cause for concern, for those who believe that professional self regulation is a reasonable way to respond to a complex situation.

One of the fundamental tenants upon which a profession is founded is the existence, and enforcement, of a Code of Ethics associated

with the practice of that profession. A recurring requirement in virtually all Engineering Codes of Ethics is the requirement for each licenced individual to work within his/her field of competence.

A second recurring requirement is to assist those who are, or wish to be, members of the profession. If members of our profession actually subscribe to these requirements, doesn’t that justify the confidence placed in us by the provincial/territorial Acts under which we practice?

And if the legislation mentioned above, and other similar types of legislation, is really necessary, doesn’t that mean that we are not complying with our own Codes of Ethics? ■

“The Engineering profession has responded to the problem”



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

JUST WHAT ARE THE PRIORITIES ANYWAY?

No doubt you've been snowed-under with a mountain of work lately. The engineering and geoscience professions have enjoyed a boom in business this year and I sense that everyone is a little red-eyed and tired from the endless meetings, long days and looming deadlines. It's hard to remember what a normal business day is like. During these busy times, I sometimes sit back in a daze and ask myself "...just what are the priorities anyway?"

You can't do it all at once, so you've got to set some priorities. This is what your Council did at the beginning of the year. During a strategic planning session led by Mr. Hugh Goldie, P.Eng., the APEGM Council identified eight issues for consideration this year. The results came out of a day long session of discussion and were derived using an electronic voting system and software to collect votes and compile data with statistical accuracy and reliability.

The results were based on a series of "paired comparison questions" where councillors were asked to make a binary choice between one issue over another; while indicating a low, medium or high strength for each decision. After the scores were entered, the software calculated the results and presented the following top three priorities out of the eight: (1) continuing professional development; (2) government relations; and (3) enforcement of the Act. Other topics discussed during the day were: certification of foreign-trained applicants;

new website and upgrade to the member database; general registration issues; and public awareness and image of the profession.

CONTINUING PROFESSIONAL DEVELOPMENT

Amongst the regulated professions, it is an important tenet to value and uphold good continuing professional development. How do we prove to the public of Manitoba that we are protecting them? Maintaining and expanding skills in a changing world is important. When I was 22 and a new graduate, I thought I knew everything.

Two decades later, I realize that I knew only the rudimentary parts back then and there's a lot more to learn and keep up with in the new millennium! As a result, I need to attend a few seminars, read some good materials, write a few articles, and get out and mix with my professional colleagues on a regular basis just to keep my "edge." The APEGM Council and Professional Development Committee are going to explore the question this year: How do we prove to the public of Manitoba that we are protecting them?

GOVERNMENT RELATIONS

The APEGM Council wants to establish a formal government relations program to be more proactive in its approach to

provincial policy initiatives and issues, as well as to work collaboratively with the government on key legislation and regulations. To implement such a program, I will be soliciting members to serve on a new government relations or "GR" committee.

The Committee's mandate will be to meet regularly with MLAs to review and prioritize issues that are relevant to the professions in Manitoba. Some potential ideas for consideration are pairing engineers with MLAs by riding; breakfast "update" meetings to inform MLAs on the economic impact of engineering and geoscience; golf games; and other meet 'n greet style events.

ENFORCEMENT OF THE ACT

About 20 years ago, APEGM had a very sharp and tenacious employee working in the area of Act enforcement. His name was David Ennis. In fact, he was so good at his job plus many other things, he became the Executive Director. Since that time, APEGM enjoyed Dave's long service as ED, but has never revisited the need for a defined enforcement staff position.

Council has said that it is time to steer the "APEGM ship" back towards more involvement in this critical area. As a result, Council has asked me to research the feasibility of creating an Enforcement Officer position to follow-up

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"You can't do it all at once, so you've got to set some priorities"

2007 Student Networking Dinner

J. Rooney, P.Eng.

The N-word: It strikes fear into the hearts of people. Otherwise confident professionals wilt at the mere mention of it. Students may not yet appreciate its importance to their budding careers. While many people embrace it and are good at it, they are in the minority. It takes practice and skill, but its value is inestimable in moving your career (and indeed your life) forward. Despite this, 75 professionals (Engineers and Geoscientists) and 75 students (Engineering and Geology) faced their fears on the evening of January 18th to learn more about, and to engage in this very thing: Networking!

The long standing annual Student Networking Dinner was a great success despite and because of the misunderstanding of networking that many hold. It was successful because those that attended really seemed to be enjoying themselves, even if they were networking. The venue and the meal were wonderful – the staff of the Delta Hotel downtown are to be commended.

Students got to meet professionals, and professionals got to meet students. The students were able to get advice from the professionals and new perspectives on various employers. The Professionals were able to get first impressions of potential new hires for summer or full time employment. However, the jewel of the evening was our speaker: Barbara Bowes. Yes, the Barbara Bowes who is well known for writing the Career Connections column for the Winnipeg Free Press. When she is not writing columns, she finds time to be President of Bowes Leadership Group, a well-known and highly respected Winnipeg based human resource management consulting firm.

Never met Barbara? You should have come to the dinner! In case you thought different, she is wonderfully

approachable and fabulously no-nonsense as well. If you want the straight goods on networking, talk to Barbara, or listen to her, as we all did. Barbara contributed to the success of the evening by both entertaining us and at the same time straightening out some of our networking misconceptions.

Barbara shared many insights relating to networking. First among them: Don't listen to your parents. That is to say, if your parents taught you to be modest, don't be. Let people know of your accomplishments. You don't want to brag, but you do need to take credit for your accomplishments and abilities.

Barbara went on to explain that networking is about building relationships, not asking for favours. You want people to know about you, and your abilities: you are the product. Knowing people and being known to people is laying the ground work to be in the right place at the right time. As Louis Pasteur said "Chance favours the prepared mind".

Barbara noted that "strategic networking is socializing with a purpose" and that it is the most powerful way to get a job or to recruit people. She went on to share many practical points about networking, too numerous to compile in their entirety here.

The audience particularly appreciated the practicality of Barbara's remarks on the subject of networking, and was given a chance to put them into practice during a brief icebreaker activity. Those who attended the event with some trepidation probably left a little more confident and perhaps wondering: why don't I do this more often? If you take Barbara's advice, you will.

Your APEGM Public Awareness Committee (PAC) is already thinking

about next year's event. You and your company should too. Many, many thanks to Alan Bailes, P.Geo., and Trevor Bowden, P.Eng., of the PAC for taking the time to coordinate and plan the event along with the indispensable efforts of Angela Moore and Claudia Shymko of the APEGM office. Thanks are in order as well for the University of Manitoba Engineering Society and Geology Club for assisting with the planning and getting the word out to students. ■

*Thank you to all our Sponsors
who made the event a success!*

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M.G. (Ron) Britton, P.Eng.
Thoughts On
Design

. . . AND EDUCATING TOMORROW'S ENGINEERS

Frontiers of Construction. How it's Made. Mega Structures. How Do They Do It? All of these Discovery Channel programs, and more, provide insights into the existing technology that is a part of our every day lives. And all of their story lines make liberal use of the words Engineer, Engineering and Design.

In a recent History Channel rerun of one of these shows, the lead-in noted that engineers solve problems that "most of us don't even know exist".

An interesting starting point when one considers the task of teaching design. As it happened, I watched that particular show on the same day that I had reread *The Engineer of 2020, Visions of Engineering in the New Century*. Somehow the comment and the book sent me a shared message.

The Engineer of 2020 was published in 2004 by the National Academy of Engineering in the United States. As you would expect, given its title, the book concentrates on a view of the future as it may be seen by tomorrow's engineers.

Their prediction of an increase in both the level and complexity of technology in our lives stems from their brief review of engineering history and their belief that "Technology is the outcome of engineering".

If their 100+ page document does, in fact, represent a reasonably reliable vision, engineering in the future will encompass much beyond the "techie" bounds that have characterized our post Sputnik era.

The book begins with a very broad review of past and present circumstances surrounding the profession.

On the other hand, the television shows only focus on the technology that has resulted from the efforts of engineers.

Still, it is easy to see a relationship between the respective messages, printed and electronic.

In the book's conclusion of the chapter entitled Societal, Global, and Professional Contexts you find the statement "Engineering is problem recognition, formulation and solution."

For me, "... problem recognition, formulation and solution" has always been what I think of as design. Given my definition, and assuming it has some validity, it was reassuring to have a panel of "outstanding engineers" (the publisher's definition, not mine) agree with me.

OK, so I watch television and read books, but where is this headed? On the one hand there are the television shows that credit our profession with the creation of modern society.

On the other, there is a book that accepts the profession's link to those creations, and attempts to project the professional needs that will prepare tomorrow's engineers for the tasks they will face.

Will those future engineers need a totally different set of skills? Probably

not. They will still design solutions to problems by applying appropriate technical understanding and the best available analytical tools. They will still design solutions that demand ingenuity, inventiveness, and creativity. They will

still accept responsibility for the calculated risks associated with using historic knowledge to bring new designs into existence.

The difference future engineers will face is found in the scope of the problems they will be

asked to solve and the expanded range of constraints their designs will need to meet.

As little as 30 years ago, there was very little concern for the environmental impact of infrastructure projects; artificial "parts" for humans were television fantasy; renewable energy had more to do with increased exploration in the oil patch than wind and geothermal sources; every telephone was physically wired into a system; the only computers in cars were suitcase size "luggables" being hauled around in the trunk; and all bank transactions required that you speak to a person.

Our profession created the technology that caused these conditions to change. Our profession will create the technology that will continue to change the conditions future generations of engineers will face.

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The following are brief excerpts of some news items in the local media and websites, which may be of interest to APEGM membership.

YET ANOTHER FELLOWSHIP FOR JAYAS

APEGM Immediate Past President Digvir S. Jayas was presented with a Fellowship in the Agricultural Institute of Canada at a ceremony in Winnipeg in November 2006. Dr. Jayas is the Associate Vice President, Research at the University of Manitoba, where he is also a Distinguished Professor and holds the Research Chair in Stored-Grain Ecosystems. It was noted that his work has become a benchmark for farm and commercial grain storage systems throughout Canada and the U.S. In 2005, Jayas was named a Fellow also by the American Institute of Agricultural Engineering and the Canadian Society for Bioengineering.

(Winnipeg Free Press, November 13, 2006)

TWEAKING THE FLOODWAY PLANS

Because of higher than anticipated construction costs, the Manitoba Floodway Authority announced in November 2006 an amendment to the original plan. Two railway bridges and four highway bridges will not be raised after all. The expanded Floodway will still provide protection from a 1-in-700-year flood event, and also stay within the original \$665-million budget.

(Winnipeg Free Press, November 14, 2006)

SHELL CANADA SHELLS OUT BIG BUCKS TO U OF M

In November 2006, oil and gas giant Shell Canada announced a \$400,000 donation to the University of Manitoba. This is a part of Shell's efforts to encourage excellence in Canadian universities, which it regards as the source of the future talent required to carry on its programs. The money will go to support student activities and teaching resources in four different faculties at the university.

(Winnipeg Free Press, November 15, 2006)

ELECTRICITY SALES TO U.S.

Manitoba Hydro reached a \$2.2-billion agreement with Xcel Energy of Minneapolis for the sale of 375 megawatts of power beginning in 2015 and rising to 500 megawatts by 2021 with the agreement concluding in 2025. Regulatory hurdles, both in the U.S. and Canada, have yet to be dealt with, of which resolution is expected in 2007.

(Winnipeg Free Press, November 4, 2006)

CONAWAPA

In November, Premier Gary Doer announced that his government will go ahead with the development of the 1250-megawatt Conawapa dam at a cost of over \$5 billion. Regulatory approval from both the Public Utilities Board and the Clean Environment Commission will be required before the project can proceed. The proposed dam will be about 90 km south of Gillam. Critics point out that there are no firm customers for the Conawapa power but Hydro executives and many independent analysts are of the opinion that the customers will be there.

(Winnipeg Free Press, November 16 and 20, 2006)

MAJOR MINERAL EXPLORATION FOR FLIN FLON AREA

What an analyst called one of the biggest mineral exploration investments ever in Manitoba was announced by HudBay Minerals Inc. in December 2006. The company plans to spend over \$45 million during 2007. By comparison, the 2006 mineral exploration expenditure in Manitoba by players other than HudBay has been estimated at \$30 million. The vast majority of the effort will be in the Flin Flon greenstone belt. The proposed expenditure includes \$8.5 million for later stage activities like drilling and excavation at the Bur mineral deposit near Snow Lake. HudBay is a producer of copper, zinc, gold, and silver. In the Flin Flon area it operates three mines, two concentrators, a zinc plant, a copper smelter, and has a 300,000 – hectare exploration area.

(Winnipeg Free Press, December 5, 2006)

CITY OF WINNIPEG SEWERS AND BRIDGES NEED UPGRADING

Engineers reported to the City of Winnipeg Council that of the 204 bridges, underpasses and culvert crossings in the city, 37 are in "poor" condition and in need of upgrade. It would cost about \$146 million to fix them. Most are suffering from corrosion, crumbling concrete, deteriorating joints or rusting steel girders. Some of the prominent structures in this list include the Disraeli Bridge and overpass, and the St. James and Osborne Street bridges. Mayor Sam Katz is seriously looking at the triple-p (private, public partnership) model to fund the upgrade.

(Winnipeg Free Press, December 2, 2006)

Concerns for the environmental health of the Red River and compliance with provincial environmental guidelines are amongst the factors driving the need for a \$1.8 billion upgrade to the City of Winnipeg sewage system. It would consist mainly of improvements to the City's three sewage plants to filter out

bacteria, nitrogen and phosphorous as well as reduce the sludge. The sewage overhaul would be the most expensive project for the City and take about 20 years to complete. The City and the Province are bickering over where the money is going to come from.

(Winnipeg Free Press, November 22, 2006)

WATER TABLE RISING

The water table in downtown Winnipeg has risen 12 m in the last 40 years, bringing it to within 7 m of the surface in some areas. It is reported that Manitoba Hydro decided to eliminate the lowest parkade level which were in the plans for its new downtown building because of this. The rise is attributable to the shutting down of industries such as meat packing and cold storage which were intensive users of groundwater.

(Winnipeg Free Press, January 22, 2007)

WINNIPEG RIVER GUSHING

A hydrological study conducted by the Geological Survey of Canada shows that the flow of the Winnipeg River has increased by 58 percent since 1924, mainly because of increased rain in northwestern Ontario and other parts of its catchment basin. This is good news for Manitoba Hydro which runs a chain of six generating stations on the Winnipeg River.

(Winnipeg Free Press, January 22, 2007)

PDAC ATTEMPTS TO STREAMLINE APPROVALS PROCESS

The Prospectors and Developers Association of Canada (PDAC) has drafted four operational statements for low-risk activities related to mineral exploration field work: dock construction and removal; bridge construction and removal; camp setup and teardown; and trenching, have been submitted to Fisheries and Oceans Canada (DFO). These statements, once approved, will eliminate the need to seek approval from DFO for these activities. A fifth statement covering drilling will be posted shortly. The PDAC invites your comments.

(On PDAC website, www.pdac.ca)

PDAC RELEASES MINERAL EXPLORATION HEALTH AND SAFETY REPORT

In late 2006, the PDAC released the Canadian Mineral Exploration Health and Safety Report for 2005. This is the first national survey of health and safety among mineral exploration companies throughout Canada. A total of 557 companies were contacted, of which 93 responded, and 76 reported exploration work in Canada in 2005. A key question asked in the survey is "Do you have a safety program?" Out of 89 companies who responded to this particular question, 44 companies (49%) responded "Yes". The full report is posted on the PDAC website.

(On PDAC website, www.pdac.ca) ■



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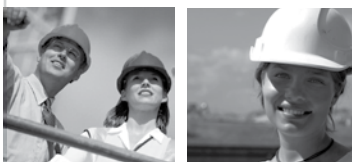
The Canadian Design Engineering Network (CDEN) and the Canadian Congress on Engineering Education (CCEE) are meeting together for the first time in Winnipeg, July 22 - 24, 2007.



We invite you to join us to discuss issues related to engineering education and engineering design.

The meeting will feature sessions tailored to the specific interests of each group, but available to all those in attendance.

<http://cden2007.eng.umanitoba.ca>



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Presentation By
Stephan Barg

November 15, 2006

On November 15, 2006, in clear, bold strokes, Stephan Barg, Senior Corporate Advisor, International Institute for Sustainable Development, led a professional development seminar through the major developments in the area of climate change. His talk concentrated on the implications of climate change for individuals including engineers, as well as social and professional implications. The following is a summary of Mr. Barg's narration of the history, impacts, policy reactions and implications of global climate change.

The first major conference to recognize the significance of global climate change was the 1988 Toronto Conference on the Changing Atmosphere, where it was emphasized that the threat arising from global climate change "was second only to a global nuclear war," and where a target of reducing greenhouse gas missions by 20% by 2005 was set.

The next major development on the international scene was the 1992 U.N. Framework Convention on Climate Change (UNFCCC), held in Rio de Janeiro – the by now famous "Rio Conference." The UNFCCC called for a stabilization of greenhouse gas emissions "at a level that would prevent dangerous anthropogenic interference with the climate system." The conclusions of the UNFCCC were ratified by most countries and a reporting regime was established.

The Kyoto conference, held in 1997, strengthened the UNFCCC findings by establishing legally binding commitments for developed countries to reduce greenhouse gas emissions. Developing countries were exempt but there was a provision for assisting them in meeting voluntary goals. Penalties were set for non-compliance by countries ratifying the protocol. Because carbon mixes over the entire

globe, there was also a provision for international carbon trading, proposed by the U.S., whereby a party, in order to meet its own commitments, could buy greenhouse gas reductions in some other part of the world. Canada committed to a reduction of 6% below 1990 levels in the "first commitment period" of 2008 to 2012.

Canada's commitments under the Kyoto treaty were implemented through the Canadian Environmental Protection Act (CEPA). Energy and fuel efficiencies were to be enhanced through a combination of incentives, regulations and taxes. Domestic carbon trading was permissible for large final emitters.

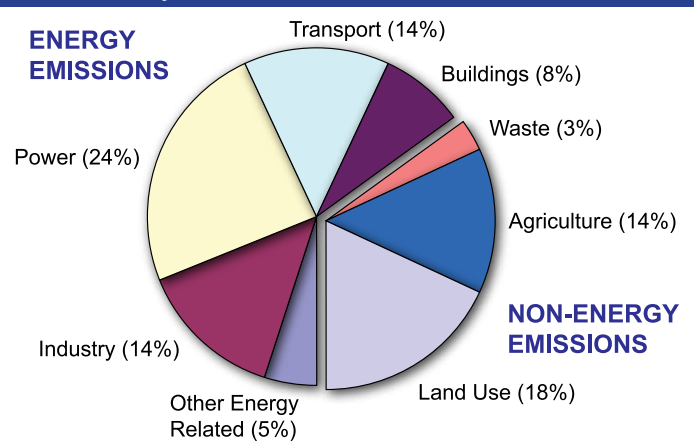
Canada's policy on greenhouse gas emissions is in a state of limbo since the election of Canada's new government in 2006. A new Clean Air Act has been proposed, but important details are not available because they will be in the regulations which would be developed over about three years following the passage of the Act. The overall target is a reduction in the 45% to 65% range by 2050.

A very recent development was the release in early November of the Stern Report in the U.K. The main finding of this report is that inaction in mitigating the effects of global climate change would have disastrous consequences for the world economy

– a 5% to 20% decrease in the global gross domestic product (GDP), which translates into trillions of dollars. However, immediate action would restrict the damage to only about 1% of the GDP. Graphics from the Stern Report showed that carbon dioxide accounts for most of the greenhouse gas emissions with the power sector being the largest contributor at 24%, followed by transport, industry, and land-use. A very interesting graphic showed the temperature rise over pre-industrial levels for various equivalent concentrations of carbon dioxide in the atmosphere, and its effects on the global water regime. The extreme scenario would see a rise of 5 degrees Celsius resulting in flooding of major world cities.

In the final part of his presentation, Mr. Barg spoke about the direct impacts of climate change on people, the tasks for individuals including engineers, and likely evolution of policies in Canada and the U.S. The climate is changing

Major Sources of Greenhouse Gases



Total emissions in 2000: 42 GtCO₂e

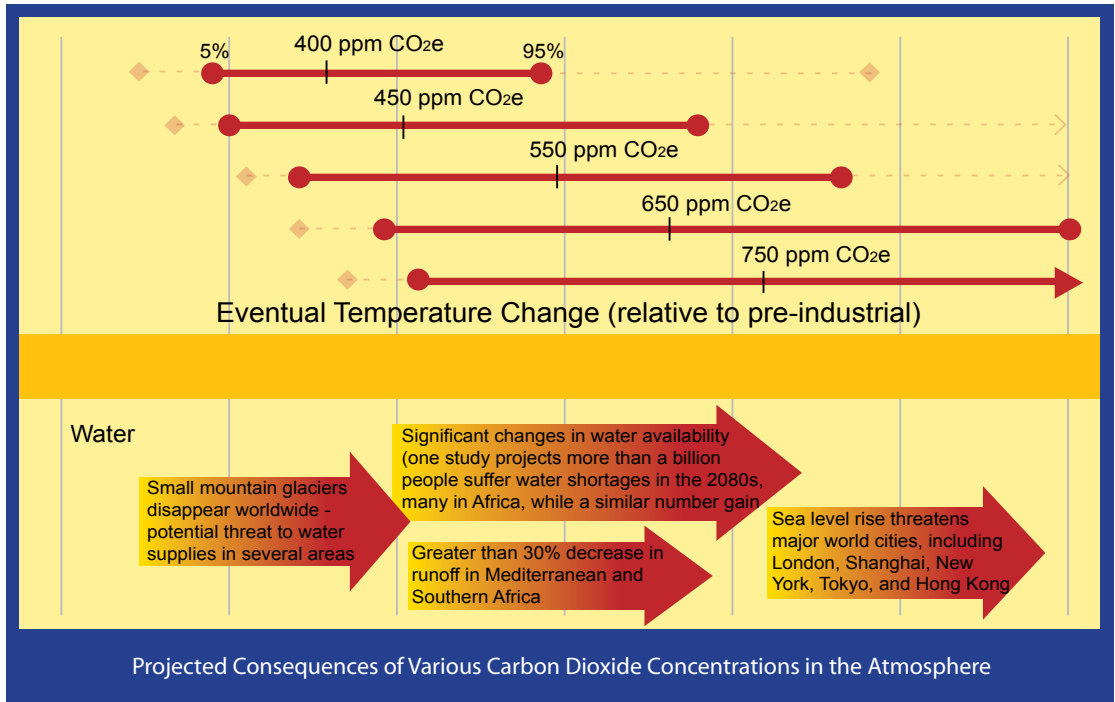
Energy emissions are mostly CO₂ (some non-CO₂ in industry and other energy related).

Non-energy emissions are CO₂ (land use) and non-CO₂ (agriculture and waste).

Source: Prepared by Stern Review, from data drawn from Wold Resources Institute Climate Analysis Indicators Tool (CAIT) on-line database version 3.0.

and we will all have to adapt. Industries relying on the ecosystem, e.g., forestry will be the most affected, but others dependent on water, such as hydroelectric power, will also feel the difference. Details of these changes are unpredictable. Real policies on improved technologies, emissions monitoring, and infrastructure will emerge. Energy efficiency and renewable energy will be essential. This will provide great business opportunities for engineers and others, who will not only be helping the environment, but also helping themselves.

We thank Stephan Barg for his time and effort in presenting this authoritative talk on a topic of great national and



international significance. After listening to him, most of us had a much clearer

understanding of things we had so far heard about in the media. ■

Wuskwatim Dam

B. Bruce, P.Eng.

A crowd of 87 engineers attended this breakfast meeting at the Norwood Hotel where we had an excellent presentation on the Wuskwatim Dam project by Tom Moffat, Division Manager of New Generation Construction for Manitoba Hydro. Tom started the presentation with a lawyer joke and then went on to provide an overview of the project and information about the location of the dam, the project schedule, the environmental challenges, and the business challenges and opportunities.

This dam has been in the planning stages since 1997 and construction has started and is expected to be completed in 2012. Tom's presentation outlined the major stages of the dam construction project and the work to date, including the building of a road to the site, the staged building of the road, and construction site camps. The construction camps will be single accommodation only because of the size of the project and the relatively short duration, but they will be equipped like small towns with

recreation facilities, pub, and telephone and internet access.

This is the first dam construction project that Manitoba Hydro has had for decades and although it is one of the smaller dams that they have constructed, it represents a new way of doing business, and this presentation provided details on that subject.

This project is a partnership with the Nisichawayasihk Cree Nation (NCN) and is being built by that partnership. The NCN First Nation will own 1/3 of the generating station and will have 1/3 of the revenue from the station. The partnership has complete participation by this First Nation community and provides training and jobs for their members, business opportunities, involvement in environmental issues, incorporates First Nation ceremonies in the river crossings, and other project milestones.

Manitoba Hydro has also made an effort to support other businesses in the area with this project by purchasing its vehicles, computer hardware

and maintenance, and groceries in Thompson, MB.

Tom reported that this will be a 200 megawatt generating station which will have a cost of \$1.0 billion and will be slightly less than 1/6th of the capacity of Limestone, which is the largest of Hydro's dams so far. This dam will require less than a one-half square kilometre of land to be flooded.

Tom also described the next dam construction projects that are in planning; the Keeyask dam which will generate 620 megawatts of power and will cost \$3 billion, and the Conawapa dam which will generate 1,380 megawatts of power and will cost \$5 billion. This will be Manitoba's largest dam when it is constructed.

This presentation was just as much an interesting view of Manitoba Hydro's partnership with First Nations, northern communities, and their environment protection measures as it was about the details of the dam construction. ■

**Presentation By
Tom Moffat**

January 25, 2007

Professional Development & Networking Events

Women's Action Committee Swing into Action

By K. Rak, P.Eng.

February 1, 2007

On February 1, 2007, the APEGM Women's Action Committee hosted **Swing into Action!** a networking golf event. Twenty six participants, both men and women, braved the cold weather and came out to the Golf Dome to get a head start on their golf skills before summer, and the golf season, arrive.

For the evening's activities, participants were divided into two groups. One group received a lesson on the driving range, while the other group played mini golf, and then they switched activities.

The first group on the driving range started off with a golf lesson from Brad Reimer, an instructor at the Golf Dome.

After giving a brief overview of the proper golf swing, Brad provided advice to individual participants as they practiced their driving skills.

While more experienced golfers were trying to master the finer points of their swing, beginners were attempting to simply make contact with the ball.

The other group of participants started their event with an opportunity to improve their putting skills with a round

of mini golf. Of course, you shouldn't find real polar bears or windmills in your putting line during a regular game.

The evening was capped off with refreshments, desserts, and an opportunity to network with fellow professionals.

This was the second annual networking golf event hosted by the Women's Action Committee.

Based on the enjoyable evening had by all, it will most likely be held in the years to come. ■



Brad Reimer, Golf Dome instructor, gives lesson on how to perfect your swing to the first group.



Lorraine Dupas and Christopher McOmber-Goings practicing what they have been taught



18 hole mini golf at the Golf Dome

DATE:

Thursday, June 14, 2007 @ 12:00 p.m.

Please plan to be ready in your carts by 11:45 a.m. to facilitate the shotgun start.

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

Dress code in effect: A collar and sleeves are required. Tailored shorts only. No jeans. Any questions, please contact the course prior to the tournament.

Soft spikes or spikeless shoes are mandatory at Quarry Oaks.



Hosting the 2007 Making Links Engineering Classic

Notarius Electronic Seal

Q. Menec, P.Eng.

Mr. Charles Tremblay, Business Development Manager, Notarius, after presenting on Wednesday, February 7, 2007 to a breakfast audience at the Norwood Hotel, attended the APEGM offices to present to a smaller group of interested professionals the logistics of electronic signatures and sealing.

Mr. Tremblay provided an overview of the benefits of "e" data exchange and transactions, an overview of Federal, Provincial and Engineering Association "e" legislation, and identified the many security challenges of this new technology.

He also explained how the technology behind digital signature and e-sealing works to link to professional titles and demonstrated how this technology is being used by the ordre des ingénieurs du Québec (OIQ) to address the challenge.

While federal law (PIPEDA) accepts electronic signatures, and electronic documents are incorporated into provincial legislation (i.e. Manitoba's Electronic Commerce and information Act), a majority of the provinces have not pursued the means to implement e-seals and e-signatures.

As with any proof of claim, electronic signature documents must be able to

identify with certainty the signatory, provide indication that the signatory is authorized to sign or seal, demonstrate a link between the digital document and the signatory, and guarantee the integrity of the data (i.e. that it was not tampered with).

These issues of authentication, authorization, non-repudiation, and integrity and privacy of the data are the many security challenges facing electronic signature and sealing implementations.

The technology behind electronic signatures and sealing lies with the advancement of encryption technology and the public / private signature key system. Use of a Public Key Infrastructure (PKI) provides authentication, non-repudiation, data integrity, and privacy. However, a PKI system does not provide the means to ensure authorization (i.e. ensure that a given key really belongs to the authorized person).

The certificate, and the manner in which issuance of this certificate is managed, is the means to confirming an individual's ID by linking the key and its owner. This is where a firm such as NOTARIUS provides its services as the managing authority for the PKI, providing confidence and authorization.

NOTARIUS, a non-profit organization in operation since 1998, is a tried and proven certificate authority trusted by Notaries, Appraisers, Technicians, land surveyors and the engineers of Quebec. By working with a Governing body such as APEGM, NOTARIUS is able to manage the issuance and revocation of certificates to authorized and "no longer" authorized individuals.

The certificate can then be used to provide authentication and non-repudiation of an original document by electronically certifying the document by seal or signature, locking the document, proving the link between document and owner, and preserving the data integrity. Governing bodies can manage the process without having to manage the infrastructure.

As with any new technology, the annual costs to manage the PKI must be analyzed against the productivity benefits that can be expected with an "e" process: a faster, more reliable, available, portable, and simple process that completes the cycle of computerization and, hopefully, can further reduce costs by ultimately moving away from the production of paper media.

For additional information, please check out the following site: <http://ingenieur.notarius.com/eng/> ■

FORMAT: Texas Scramble, Shotgun Start

COST: \$175.00 per person (includes BBQ lunch, Golf, Cart, Dinner and Prizes)

DINNER: Approx. 6:00 p.m.

The first 144 registered golfers with accompanying payment will play. As Quarry Oaks is a 27-hole facility, we may be able to accommodate up to 215 golfers. Entries and **payments** are to be submitted to the APEGM office by **4:00 p.m. Friday May 18, 2007.**

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

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Best Practice for Selecting Consulting Engineers

Written By the Public Sector, For the Public Sector

R.G. Rempel, P.Eng.

Recently, a lot of good dialogue has taken place exploring the most effective ways to retain consultants who provide services in professional engineering.

This is timely discussion, since consulting engineers operate within an economic climate that has created substantial challenges to the business of professional engineering.

Nationally, most of us can confirm what we are witnessing first-hand -- our industry is losing a large number of highly experienced professional engineers who are at the age where they will retire from consulting engineering practice in larger numbers than we can effectively replace or recruit.

On a regional level, most consulting engineering firms operating in Manitoba

will confirm that replacing, retaining, and attracting engineering talent is becoming a significant challenge because qualified candidates can choose to practice here at a lower salary level or jump into hotter economies in Alberta, and now, even in Saskatchewan.

We welcome this dialogue. In the Manitoba market and also at a national level, our organization and its affiliates have participated in discussion forums to help identify the best ways to select and retain professional engineering services in consulting engineering.

Local open-line radio segments took turns digesting recommendations put forth in the City of Winnipeg's recent "Use of Consultants Audit Report" issued in June, 2006.

We joined other industry stakeholders in these "on-air" discussions and were pleased to have the opportunity to correct some misconceptions about how the business of consulting engineering operates. The use of consulting engineers by public sector clients was also under scrutiny, given rising costs of infrastructure improvements.

Each of these discussions contained a similar underlying theme: a desire to obtain the best possible value for the "engineering dollar" while retaining the need for innovation in the design and delivery of engineering services.

Thankfully, these two desires are not mutually exclusive if the appropriate framework is used for selection of Professional Engineering Consultants for a given RFP opportunity.

The National Guide to Sustainable Municipal Infrastructure (InfraGuide) has just released a Best Practice for Selecting a Professional Consultant. There are some interesting messages in this Best Practice as developed by InfraGuide.

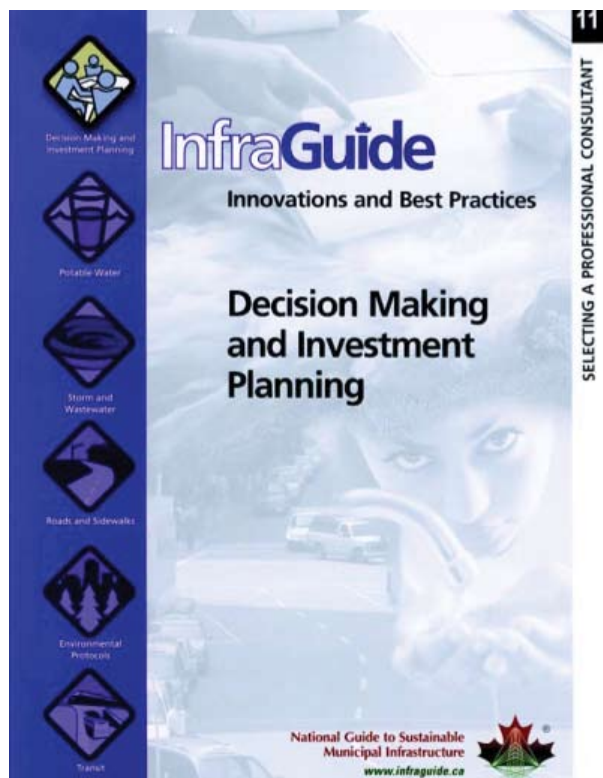
One is that the principle of Quality Based Selection (QBS) is recognised in the Best Practices as superior to methods that rely on price-based selection. The other interesting message is that the Best Practice document itself was written predominantly by the public sector for the public sector.

The InfraGuide Best Practice was born through efforts based upon extensive interviews and research in numerous jurisdictions. In the U.S., a move away from price-based selection was made law in 1972, where the Brooks Act requires all federal procurement of engineering services to incorporate QBS. Forty-seven states and many local jurisdictions have adopted similar legislation.

In Canada, many professional bodies (including CEM) recommend QBS over traditionally applied price-based methods; however, the adoption of these qualifications-based methods was not strong when the recommendation itself was coming from the consulting engineering firms.

Now, the issue of where the message was coming from is no longer a concern, as InfraGuide's own interview and research process clearly identified advantages to clients when selection criteria moved away from "lowest fee/lowest cost" to qualification-based selection. The specific advantages included encouraging innovation, life-cycle cost savings and improved sustainability for the client's project.

The Consulting Engineering community is excited to see a Best Practice developed by municipal infrastructure stakeholders espousing the need to hire engineering



InfraGuide: Innovations and Best Practices, Decision Making and Investment Planning.

consultants based upon skill sets and applicable experience, not just their hourly rate or estimate for completing the project.

InfraGuide itself is a collaboration of the Federation of Canadian Municipalities, Infrastructure Canada, the National Research Council and the Canadian Public Works Association.

The organization has published over 50 Best Practices to date. The general flow

of the recommended Best Practice for Selecting Consulting Engineers is outlined in Figure 1.0.

The Best Practice is a competitive, qualifications-based process that is based upon the following principles:

- The most appropriate solution is not necessarily the cheapest design solution.
- The Consultant's ability to create the most appropriate solution should implement a selection process that:
 - i. Leads to a selection of the engineering team best qualified for the assignment, and;
 - ii. Employs the experience of this team to develop the scope of services to ensure all opportunities for adding client value are provided for within the project.
- Selection does not ignore price, but encourages price to be considered within the more meaningful context of bringing fee into discussion only after scope of services are jointly established between the client and the top-ranked engineering firm.

The Best Practice encourages clients to regard their Consulting Engineers as trusted advisors who share their priorities and interest in obtaining best outcomes for the project.

At CEM, we're excited to see a well-researched Best Practice developed by public sector stakeholders.

We also appreciate the value in these same stakeholders recognizing the Best Practice as their own means to achieve maximum value from their engineering investments.

We invite you to look for us at various forums throughout the year where we hope to bring your attention to the InfraGuide Best Practice for Selecting Professional Consultants.

You can request your own copy of the InfraGuide Best Practice by contacting CEM through www.cemanitoba.com or go to www.infraguide.ca and follow the links from "Published Best Practices" on the main page. ■

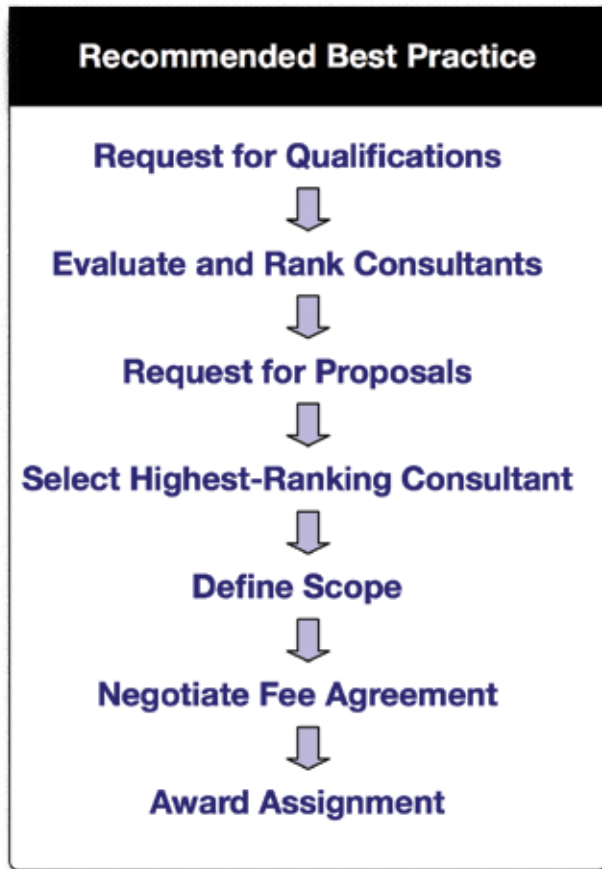


Figure 1.0: Recommended Best Practice Main Steps



Roger Rempel, P.Eng. is President of the Consulting Engineers of Manitoba Inc, and practices as an environmental engineer and managing partner with TetrES Consultants. He is a past winner of APEGM's Early Achievement Award in 2002.

continued from page 7, Thoughts on Design

Engineering, and the technology we create, is now imbedded in virtually all parts of society. Inclusion is no longer just local, but an international phenomenon.

Cultures that were once distant and of no concern are interlinked in our daily lives. Technology has made the world both smaller and different. User friendly technology has allowed persons from outside our technical world to become more involved in its application.

All of this requires today's, and tomorrow's, engineers to have an ever increasing understanding of the non-technical considerations that will affect future designs. And all of this requires that today's student engineers gain a much broader experience in their education than was required in the past.

The problems we solved are the cause of the problems future engineers will need to solve.

Again, quoting from The Engineer of 2020, "What we do actually matters to history. The future really is the result of what we do today."

In preparing the next generation of engineers, the difficulty arises in finding the middle ground where they understand the process and the constraints, but also possess the technical knowledge to arrive at acceptable solutions. ■

Meet your new President

J. Etcheverry, GIT

In February, 2006, we introduced Robyn as a new APEGM Councillor. A year later, she is being introduced as the Association's latest president. As you may recall, Robyn was born and raised in Winnipeg and obtained her B.Sc. in Electrical Engineering from the University of Manitoba in 1998. During her undergraduate training she was awarded the Institute of Electrical and Electronics Engineers (IEEE) Canadian Foundation Scholarship.

Robyn has worked for Teshmont Consultants in Winnipeg since completing her degree, and is currently a Supervising Engineer and the Manager of Marketing with the firm. Her primary focus is on the engineering of submarine and underground cables, transformers, substations, as well as conducting system studies. Her work has allowed her the opportunity to travel to projects all over the world.

Robyn is a Senior Member of the IEEE, and currently is the Vice-Chair of the IEEE Power Engineering Society's HVDC and FACTS Subcommittee. Within APEGM, Robyn has been a

member of the Public Awareness Committee and has organized numerous engineering awards for the Manitoba Schools Science Symposium.

She is also a youth exchange councillor with the Rotary Club of Winnipeg and has provided numerous presentations to high school students interested in engineering as a career.

Robyn believes that one of the main challenges presently facing APEGM is the increase in local demand for engineering professionals. She points out that this is a concern of many of the professions where the age demographic continues to increase.

She acknowledges that some of this demand is being met through the increase in foreign trained professionals. However, APEGM is currently processing approximately 170 assessment files, a strenuous task for the association's staff and volunteers.

Robyn has had a positive experience with council and is pleased with the results of the recent Strategic Planning Session that identified and prioritized



New President, Robyn L. Taylor, P.Eng. PMP

key themes on which the association needs to focus: mobility, professional development, government relations, compliance, and public awareness.

She states that, "The next step for council is to focus on the high priority issues, prepare plans to address them, and identify metrics to monitor the progress. This way our performance will be appraised based on meeting objectives in the desired timeframes." A task she predicts to be 'interesting.'

Come spring, watch for Robyn Taylor cruising the streets on her Vino scooter and help join in welcoming her as APEGM's president for the 2006-2007 year. ■

Meet your new Councillor

E. Hancox, P.Eng.



New Councillor, John C. Woods, P.Eng.

Our new councillor, John Woods, M.Sc., P. Eng., received his Bachelor of Science degree in Electrical Engineering at the University of Manitoba 1983, and went on to complete a Master of Science from U of M in 1985. John joined a.e.b. engineering group in 1986, and, in the following ten years gained further consulting engineering experience at UMA, Action Consulting and MCW Consultants.

In 1997 he co-founded the multi-discipline firm Tower Engineering Group. In July of 2004 he established Woods Engineering, and consults in electrical engineering and power quality.

In 1999, John was appointed to the Consulting Engineers of Manitoba Board of Directors, having previously served on several CEM committees. In 2002, he was appointed Board

continued on next page

continued from page 16, Meet Your New Councillor

Secretary and in 2003 was elected President of the association. With the retirement of Elaine Madison in January of 2004, Shirley Tillet became the new Executive Director, and John stayed on as President of the association for a second year, to provide continuity.

John has been a member of the APEGM nominating committee, has served two years on the Engineering, Geosciences and Architecture Inter-Association Relations Joint Board, and represented CEM on the City of Winnipeg Industry Advisory Group.

John was born in Winnipeg, and in 1963, moved to Kansas City when his father, a futures grain trader for Cargill Grain, was transferred. In 1971, he moved back to Winnipeg,

which has been home base for John throughout his working career. He has traveled across Canada as well as to the Philippines and the Ukraine for engineering projects.

He is or has been a member of professional engineering associations in Ontario, Saskatchewan, Alberta, British Columbia, the Yukon, and Nunavut & North West Territories, along with practicing engineering in all of these jurisdictions. He held 'Designer' status with the Lightning Protection Institute, and is a PADI certified Scuba Diver.

John is currently working at the University of Manitoba on a CCPE initiative to coordinate a national approach to the successful Internationally Educated Engineers Qualifications Program.

John has been involved in many energy efficiency projects, and maintains a strong interest in energy production, usage and particularly alternative energy. This has led him to engage in a Ph.D. program, in Mechanical Engineering at the University of Manitoba, with a thesis centered on generating electricity using the kinetic energy of flowing rivers – without the need for a dam or any fixed structure.

His goals as a counsellor are to: increase awareness of engineers and engineering in the public's eye, encourage anyone who is suitably educated and trained to become a member of APEGM and encourage the members to adopt a Continuing Professional Development scheme. ■

S. E. T. Day Inaugural Event a Great Success!

G. K. Andrejevic, EIT

President Eموke Szathmary welcomed high school students and science teachers to the first ever Science, Engineering, and Technology Day hosted by the University of Manitoba, Friday, February 16, 2007. The APEGM, NSERC, Faculty of Education and Manitoba Science, Technology, Energy and Mines were co-sponsors of the event.

APEGM Past President Digvir Jayas, P.Eng. and Associate Vice-President of Research at the U of M was the driving force behind the idea to bring high school students from across Manitoba to the Fort Garry campus to focus on the future of research in the sciences and engineering. There were 220 guests from 54 schools that participated with 27 schools traveling to Winnipeg from rural Manitoba.

Everyone received pens, notepads and T-shirts upon registration. Out-of-town guests were provided with hotel accommodations and free parking.

Breakfast, lunch, nutrition breaks, and refreshments were served in a day long agenda that stayed on time and finished slightly ahead of schedule. Warm hospitality was enjoyed by all.

Digvir challenged some of the top researchers at the U of M to present their "wild-eyed" possibilities of what technology could bring to society in the year 2025 – and the researchers delivered!

The line-up of presenters was impressive. Topics included "Nanotechnology: Big Changes from Little Things" by Dr. Cyrus Shafai of Computer & Electrical Engineering; "Designer Foods: Putting the Best Food Forward" by Dr. Peter Jones of the Richardson Centre for Functional Foods and Nutraceuticals; Dr. David Barber debunked myths about global warming in his topic "Climate Change: Walking on Thin Ice"; and Dr. Kathleen Londry finished the day with her space-age talk on "Astrobiology: The Study of Life in the Universe.

The full day covered six (6) futuristic presentations on what technology might look like in the year 2025.

Each lecture was 45 minutes long with 30 minute breaks in between. Interest was peaked by the interactive survey software used throughout the day. Upon arrival at Room 290, Education Building, participants were handed a small blue "i-clicker" device (resembling a TV remote control).

During each talk, presenters posted questions on the big screen to the audience and invited everyone to vote. In seconds, the whole room entered their answers via their "i-clickers" and the software showed the results with colourful, bar-graphs. This resulted in many "oohs and aahs" as voters expressed their delight or disappointment with their answers.

Congratulations to Past President Digvir Jayas on a successful event. Plans are underway to host "SET Day" again in 2008 with the possibilities of remote locations participating via live webcasts. If your organization or firm would like to support SET Day, please contact Dr. Digvir Jayas, P.Eng. via email at digvir_jayas@umanitoba.ca. ■

Manitoba's **New** Occupational Safety and Health Regulation - **Highlights**

D. Muise, Workplace Safety and Health Division, Manitoba Labour and Immigration

A modernized workplace safety and health regulation, recently announced by the provincial government, took effect on February 1, 2007.

The new regulations are the product of an extensive four-year consultation and review process with stakeholders (employer, employee, and technical representatives, industry-wide). Government is confident that the open dialogue maintained throughout the review and drafting stages has served to develop a comprehensive, balanced and effective regulation package.

"The purpose of safety and health legislation is to provide a reasonable, practical and effective framework for preventing work-related injury, illness and death," says Minister of Labour and Immigration, Nancy Allan. "By carefully considering the advice of Manitoba workers, employers and technical experts in updating the regulatory requirements, we are better equipped to meet the needs of today's workplaces."

This initiative completes the process to modernize Manitoba's legislative framework for occupational safety and health, which was initiated in 2002 with significant changes to The Workplace Safety and Health Act.

The new legislative package combines 12 existing regulations and adds specific areas to address emerging workplace safety and health issues as well as particularly hazardous work environments (i.e. asbestos, confined space, ergonomics, harassment, violence, etc.)

The majority of requirements under the new regulation modernize existing duties and clearly outline requirements previously enforced through the general duty clause of The Workplace Safety and Health Act. New requirements under the regulation follow the recommendations of the Review Committee on Workplace Safety and Health, accepted by government in 2002.

WHICH RULES APPLY?

To provide sufficient lead time for employers to comply with the updated requirements, existing workplace safety and health regulations are to be followed until the new regulation takes effect.

REGULATION HIGHLIGHTS

The following are highlights of the updated Workplace Safety and Health Regulation:



SAFE WORK

MUSCULOSKELETAL INJURIES (MSI) - NEW

- New regulatory requirements spell out the employer's duty to conduct a risk assessment (similar to a job hazard analysis), in consultation with the safety and health committee or representative, where a risk of MSI:
 - is known to be present
 - is reasonably obvious
 - has been identified
- If the assessment identifies a risk to workers of MSI, control measures must be implemented. Control measures may include: Engineering controls (i.e. design, position of equipment), Administrative controls (i.e. safe work procedures developed and implemented), Appropriate work schedules (i.e. rest and recovery periods, job rotation), or Personal protective equipment.

- The policy must provide information on specific procedures to be followed in the event of an incident of either violence or harassment.

HEARING CONSERVATION AND NOISE CONTROL

- A noise exposure assessment must be conducted by the employer where a worker is likely to be exposed to noise levels over 80 dBA.
- Hearing protectors must be provided to workers, upon request, at exposure levels of 80-85 dBA or greater (previously 85-90 dBA).
- Engineering controls, or the use of hearing protectors and warning signs are mandatory at exposure levels over 85 dBA (previously 90 dBA).
- The employer must provide annual audiometric testing to workers exposed to noise levels over 85 dBA (previously 80 dBA).

VIOLENCE AND HARASSMENT IN THE WORKPLACE - NEW

- The employer is required to identify and assess the risk of violence, and instruct workers about the risk.
- Both a violence prevention policy and harassment prevention policy must be developed (in consultation with the workplace safety and health committee or representative); implemented and posted in the workplace.
- The policies must state that:
 - No worker shall be subjected to violence or harassment
 - The employer will take corrective action
 - The policy is not intended to discourage/prevent complainant from exercising other legal rights, etc.

ASBESTOS - NEW

- An asbestos control plan must be developed and implemented.
- An inventory of all material containing asbestos in the workplace must be completed.
- All material containing asbestos in a workplace is to be identified by signs, labels or other effective means.
- Workers who may be exposed to material containing asbestos are to be informed, instructed and trained in:
 - The hazards of asbestos
 - Means of identifying the material containing asbestos at the workplace
 - The use of personal protective equipment

RADIATION - NEW

- This section does not apply to radiation sources subject to the Nuclear Safety and Control Act, or to medical or dental uses of radiation in patient treatment.
- The employer is required to develop and implement safe work procedures, and train workers on these procedures.
- The employer must inform a worker who may be exposed to radiation in the workplace of the potential hazards of radiation exposure.

CONFINED SPACE - NEW

- Due to the hazardous nature of work in confined space, requirements previously contained in a Guideline are now part of the Regulation.
- The employer must develop and implement safe work procedures and train workers on these procedures. The safe work procedures must provide specific details on:
 - safe entry to and exit from a confined space
 - personal protective equipment required (including respiratory protection)
 - designation of a standby worker
 - emergency response
 - entry permit
 - air quality testing

FALL PROTECTION

- Required where there is a risk of a worker falling:
 - A distance of three metres (10 feet) or more (previously 2.5 metres/eight feet); or from lesser heights under special circumstances.
- An employer with a workplace subject to this Part must provide appropriate fall protection systems; develop and implement safe work procedures; and train workers on these procedures.
- General fall protection requirements will apply to new home residential construction and the erection of steel frame buildings.
- Specific provisions will apply to roof work on existing residential buildings.

EXCAVATIONS

- The employer is required to develop and implement safe work procedures for the work to be done (including the installation, use and removal of shoring) and train workers on these procedures.

- The employer must notify the Workplace Safety and Health Division before making an excavation, including trench excavation, more than 1.5 metres deep (five feet); (previously 1.8 metres/six feet); grave digging is exempt.
- Shoring is required in an excavation exceeding 1.5 metres in depth (five feet) (previously 1.8 metres/six feet).

MACHINE, EQUIPMENT AND TOOL SAFETY

- Tag-out systems will no longer be allowed without the use of lock-out devices. (Where a tag-out system is in use at a workplace when this regulation comes into effect, the employer will be required, within a one-year period, to either supplement the tag-out system with a lock-out device or discontinue use of the tag-out system.)
- New requirements for welding

FIREFIGHTERS - NEW

- General standards for vehicles and equipment:
 - Any firefighting vehicle and equipment for use in an emergency operation must be designed, constructed, operated, maintained, inspected and repaired to ensure the safety and health of a firefighter
- Written records of inspection must be signed by the inspector, kept, and readily available to firefighters
- An employer will be required to provide a personal alert safety system for firefighters; firefighters must use/wear when entering a building to fight a fire.

OIL AND GAS - NEW

- The employer is required to develop and implement safe work procedures regarding the drilling, operating or servicing of wells, and train workers on these procedures.

DIVING OPERATIONS - NEW

- The employer is required to develop and implement safe work procedures that meet the Occupational Safety Code for Diving Operations (CSA Standard), and train workers on these procedures.

STANDARDS (COMPLIANCE)

- The regulation will generally require that the most recent version of a named code or standard must be complied with. However, where this regulation requires that a tool, machine or piece of equipment meet a code or standard,

the code or standard may be the edition published at the time the tool, machine or piece of equipment was manufactured.

WSH DIVISION PUBLICATIONS

The Workplace Safety and Health Division is updating existing publications and developing new publications according to the new regulatory requirements. As they become available, all publications will be located on the main page of the Division's website (www.gov.mb.ca/labour/safety) under the "New regulatory requirements" link. Upon completion, these documents will also be available (in limited quantity) in hard copy and on CD-ROM by calling 945-3446.

Updated and new Division publications will include:

- Regulation Summary Sheets highlighting the requirements under each 'Part' of the new regulation
- Standards Information Sheets highlighting/summarizing all Standards (i.e. CSA, ANSI) requirements as referenced under the new regulation
- Codes of Practice:
 - Confined Space
 - Explosives
 - Powered Lift Trucks
 - Working Alone or in Isolation
- SAFE Work Guidelines:
 - Asbestos
 - Automotive Lifts
 - Chainsaws
 - Excavations
 - Extreme Temperatures
 - Fall protection (includes roof work and steel erection)
 - Forestry
 - Health hazards
 - Machine guarding
 - Musculoskeletal injuries
 - Scaffolding
 - Hearing Conservation and Noise Control
 - WHMIS
- SAFE Work Bulletins

Council Reports

Thursday, December 7, 2006

A. Kempnan, P.Eng. (Ret.)

On December 7, 2006, council gathered for the last full meeting of 2006. This meeting was one of beginnings and endings. Ms. Robyn Taylor took on the mantle of leadership at this meeting, beginning her term as president of APEGM. Other councilors had fulfilled their terms and were ending their immediate association with the organization.

After the minutes and agenda were approved, certificates were presented to everyone celebrating a beginning or ending. President Taylor received a handsome framed certificate of election while retiring councilors received ones for service rendered. New councilors were introduced and the meeting was underway.

The leading item was the Ownership Linkage Plan presented by Councilor Avery Ascher. It's now customary for councilors to actively work on Policy Governance items and Councilor Ascher and her committee had created an Ownership Linkage plan for 2007.

Ownership Linkage is a concept under Policy Governance. APEGM is "owned" by the public and the membership. This plan laid out what groups and individuals APEGM should interact with in the coming year to fulfill its obligations to those owners. Council responded very favorably to the report, and they had a few questions and comments. Councilor Woods asked where the linkages to MAA and CTTAM were; the answer was they already existed apart from the plan. The discussion closed with Councilor Ascher asking for suggestions for groups to target.

Keeping with Ownership Linkage, the next item was the MOU with home inspectors. Last year an MOU was drafted and sent back to Council for revision on the advice of APEGM counsel. The revised document still didn't fully satisfy E. Wells Peever, who was generally against an MOU with the home inspectors because he felt it helped home inspectors, but had no benefit for engineers. In spite of his misgivings, council approved the MOU, noting it could be canceled without notice and that it made Manitoba a leader in this regard.

The next topic generated much impassioned debate between Councilor Blatz and Past President Jayas. How much experience credit to give to post graduate students applying for registration? Director of Admissions Sharon Sankar said inconsistencies had occurred in the past, but now the Experience Review Committee had come to an agreement for an amendment to the Manual of Admissions. She said there were many kinds of masters programs and the changes would affect about 50 students at the U of M.

Councilor Blatz said it was a long-standing issue and he wanted council to examine the process involved. One of the issues was a requirement for grad students to have experience outside academia. Past President Jayas felt there was a discrepancy in the way that engineers in academia and engineers in industry

were treated. He felt that engineers in academia actually had more engineering content in their work. Councilor Blatz cited a few examples of what he considered fair and unfair treatment, and said he was willing to stand behind the experience assessments he'd done.

The discussion led Councilor Ryczkowski to conclude that, by the sound of it, uniform rules were not even possible. Councilor Blatz thought the whole issue should go back to the relevant committees. In the end Past President Jayas proposed a motion saying that there should be no special treatment for any group and that hours should be granted on a case-by-case basis.

The meeting turned to electing a vice president and a member of the Executive Committee. The vice presidential post carries special significance since that person will become president. One councilor agreed to stand, but since not all councilors were present the election was deferred to the next meeting.

The next item was one which members might hear more about in the future . . . enforcement of the geoscience and engineering act. In 2005 APEGM successfully prosecuted a company for offering engineering services without a certificate of authorization. The defendant appealed the decision to the courts and lost. After the judgment came down, Executive Director Grant Koropatnick said the defendant sent APEGM a number of harassing faxes, which the association ignored on the advice of counsel. The issue today was whether to publish the details of the case in *The Keystone Professional*. Past President Jayas said since the court decision was public information they should publish, as it would show the membership that APEGM was working on their behalf. Council decided to publish after first clearing it with legal counsel.

The last major item before council was a geoscience issue called "Looking to Exempt." The concern was that a group of geoscientists who graduated in Manitoba in the years 2001-2004 were not adequately informed about qualifications and deadlines for professional registration. On March 9, 2006 council passed a motion easing the requirements for this group. This set council on a collision course with the Academic Review Committee (ARC) which held the group had been properly informed. On that basis ARC asked council to reconsider the March 9, 2006 motion. Councilor Blatz thought since this was a singular event, and since much time had already been invested in resolving the issue, it was best to let the March 9, 2006 motion stand.

Councilor Blatz and Councilor Corkery volunteered to speak to both sides in an attempt to resolve the impasse. In the final analysis, it appeared that only three graduates were affected.

The meeting ended with an educational session for new councilors presented by Executive Director Grant Koropatnick. He explained the duties and working of APEGM in a lively and entertaining fashion. One of his stated goals was to make councilors' meeting time lively and productive, and it appears he is succeeding. ■

Thursday, January 18, 2007

A. Erhardt, EIT

Following a very social lunch, President Robyn Taylor called the meeting to order at 12:30 pm. Things got underway with a presentation on ownership linkage, led by Councillor Avery Ascher, chair of the Ownership Linkage Committee. Councillor Ascher identified three priority groups that the committee has decided to target: rural communities, aboriginals, and industry. The committee is currently moving forward and trying to establish contacts within these key groups. This discussion spawned a debate in regards to Council itself. Councillor Arthur Chapman compared APEGM Council to other professional associations' councils in their makeup and numbers.

A brief summary of where the Memorandum of Understanding (MOU) between APEGM and the Canadian Association of Home and Property Inspectors (CAHPI) was given by Councillor James Blatz. The MOU was passed last meeting, and was passed on to the CAHPI Manitoba for review. Councillor Blatz informed the council that the MOU was also approved by CAHPI Manitoba, and that three professional engineers had stepped forward to provide services in conjunction with CAHPI Manitoba members.

Mr. Hugh Goldie, P.Eng. who had worked with Council this past summer providing training on how to deal with risk management issues, attended the council meeting. He was

on hand to give a presentation on "What are the risks facing APEGM". His 45 minute presentation was warmly received and provided much discussion material.

The third presentation that was made was by Mr. Malcolm Symonds, P.Eng., Manitoba representative on the Canadian Engineering Qualifications Board of the Canadian Council of Professional Engineers (CCPE). The purpose of the presentation was to ask for Council's feedback on CCPE's latest draft of the "Definition of Engineering" and its interpretation. After a brief PowerPoint presentation, the floor was opened for debate amongst Council. There was no shortage of opinion and a lively discussion ensued. Council decided to delay any formal opinion or stance on the definition at this time pending further review.

At this time, nominations for an Executive Committee Member were undertaken to replace outgoing committee member Councillor Blatz. From those who were nominated, only Councillor Don Himbeault allowed his name to stand, and was elected by acclamation.

After handling some Investigation Committee issues, Council reviewed and updated the outstanding action items list and discussed the agenda for the next meeting to be held in March. Some information-only items were reviewed and following the council meeting self evaluation, the meeting was adjourned at 4:10 p.m. The three presentations that were made inspired much debate and have laid the foundation for future discussions and decisions by our elected Council. ■

SPRING IRON RING CEREMONY

*Tuesday, March 20, 2007
8:00 p.m.*

*Multi-Purpose Room,
Second Floor of the
UMSU Centre,
University of Manitoba
Fort Garry Campus*

PAY YOUR DUES!

DUES HAVE BEEN MAILED TO ALL MEMBERS AND MITs. IF YOU HAVE NOT RECEIVED YOURS, PLEASE CONTACT THE APEGM OFFICE AS SOON AS POSSIBLE.

FINAL PAYMENT DATE - MARCH 31, 2007

ALL MEMBERS OR MITs WHOSE DUES PAYMENTS ARRIVE IN THE APEGM OFFICE AFTER MARCH 31, 2007 WILL BE DE-REGISTERED OR REMOVED FROM MIT ENROLMENT.

APPLICATIONS FOR REINSTATEMENT MAY BE MADE IN ACCORDANCE WITH SECTION 24(2) OF THE ENGINEERING AND GEOSCIENTIFIC PROFESSIONS ACT.

Your Exploration Advantage: Highlights from the 2006 Manitoba Mining and Minerals Convention

..... • Staff of Science, Technology, Energy and Mines, Government of Manitoba

Manitoba's 38th annual Mining and Minerals Convention held November 20th to 22nd in Winnipeg drew more than 800 delegates to learn more about Manitoba's Exploration Advantage. Record-setting prices for gold, nickel, copper and zinc coupled with the mineral potential of some of the world's richest greenstone belts attracted companies to spend a record \$53 million to explore in Manitoba during 2005.



Trade show exhibitors promote Manitoba's 'Exploration Advantage'.

The buzz on exploration was positive at the Welcoming Reception where Jim Rondeau, Manitoba's Minister of Science, Technology, Energy and Mines, and the mayors of Manitoba's mining communities greeted delegates and got the convention officially underway.

Minister Rondeau's opening remarks headlined the technical sessions. He noted that 5 exploration projects in Manitoba (4 nickel and 1 gold) are undergoing pre-feasibility studies for potential mine development. This includes the Bucko deposit near Wabowden for which Crowflight Minerals has applied for an environmental act licence and is hoping to have in production by the end of 2007.

The Minister welcomed San Gold Corporation as a major mining operator in the province, joining long-standing producers Inco, Tanco, and Hudson Bay Mining and Smelting, a wholly owned subsidiary of HudBay Minerals. San Gold poured their first gold in August 2006, to make the

Rice Lake mine Manitoba's only primary gold mining and milling operation and Canada's newest gold producer.

Rondeau congratulated HudBay Minerals for record earnings in 2006 and Inco for celebrating 50 years of mining in the Thompson Nickel Belt. He also welcomed CVRD of Brazil as the new owners of Inco and was pleased to note that the company plans on averaging \$150 million annually in capital spending over the next two years on infrastructure at Thompson.

The Minister commented on government supports for exploration through financial incentives, geoscientific data and an effective regulatory framework that have earned the province a ranking of 3rd worldwide for its mining policies and geological database (based on results of the 2006 Fraser Institute Survey of Mining Companies).

Keynote speakers also included Nick Sheard, Vice President of CVRD Inco who discussed Inco's exploration success at Thompson, and Dale Ginn, President of San Gold Corporation who provided an overview of the company's gold mining operation in Bissett and its positive impact on local economies.

Ric Syme, Director of the Manitoba Geological Survey, followed with an overview of the survey's activities for 2006, which included in-depth investigations in the Superior Boundary Zone and Thompson Nickel Belt, the Paleoproterozoic Flin Flon Belt, and the Bissett and Bird River regions of southeastern Manitoba.

Phanerozoic investigations focused on completing the surficial geology compila-

tion for the province and completion of the Williston Basin Targeted Geoscience Initiative. New field projects were initiated in the northern Superior Province, the Kasmere Lake area of Manitoba's far north, and the Wuskwatim Lake and Flin Flon areas.

Syme noted the survey's convention release of a digital geological compilation of the entire Thompson Nickel Belt on CD, offering the most comprehensive presentation to date of the province's most prolific nickel resource.

The conference celebrated the 50th anniversary of Inco's Thompson nickel discovery with a full-day session on Manitoba's world-class nickel potential.

Presentations from industry, the Geological Survey of Canada and the Manitoba Geological Survey discussed new discoveries, geological interpretations and exploration techniques that continue to expand nickel exploration within the Thompson Nickel Belt and into new areas of the province. Other sessions focused on new mapping in frontier regions and innovative exploration techniques applied to established mining camps.



Panning for gold with Yukon Dan

New to the convention was a half-day session discussing Manitoba's \$70-million commitment to the rehabilitation of orphaned and abandoned mines in the province, including a progress report on ongoing reclamation projects.

The convention also featured trade show exhibitors, mineral property and geoscientific poster displays and 2 special workshops; an Aboriginal mining workshop focused on community prosperity through mining and a workshop on

with the convention. Over 200 elementary and junior-high school students participated in activities that included panning for gold with Yukon Dan, mineral and fossil collecting, a Rock Doc presentation, lapidary demonstration, fun with minerals on the Internet and a tour of the exhibit area.

The Rock Doc portion of the program was delivered with the assistance of geology students from the University of Manitoba and Brandon University.

The Honourable Gary Doer, Premier of Manitoba, was in attendance to deliver the keynote address at the opening luncheon. The Premier commented on the importance of continuing to

work with the mining industry on policies that will allow the industry to grow, benefit the economy and create new jobs.

Doer also spoke of the need for industry to consult and partner with Aboriginal governments to develop long-term policies that respect treaties and provide opportunities for economic development.

The Premier announced that revenue from new hydroelectricity export sales will enable Manitoba

to maintain the lowest rates in North America and keep the province's mining and smelting industries competitive.

In closing, Premier Doer and Minister Rondeau presented a "Community Vision" award to Hugh Wynne, CEO of San Gold Corporation for his commitment to working with local communities to train and employ residents as underground miners and mill process operators at the Rice Lake Gold Mine in Bissett.

Dr. Harold Gibson of Laurentian University had the last say at the convention's Wind-up Luncheon. Dr. Gibson discussed how "a bit of the old", land-based studies of ancient volcanic rocks, coupled with "a bit of the new", ocean-based research of the present-day sea floor, is leading to a better understanding of volcanogenic massive sulphide deposits.

The 2007 Manitoba Mining and Minerals Convention will be held November 15th to 17th in Winnipeg. ■



Premier Doer and Minister Rondeau present 'Community Vision' award to Hugh Wynne, CEO, San Gold Corporation

Mobile Metal Ion technology detailed its successful application to exploration for base and precious metal mineralization.

The Aboriginal Mining Workshop was held as part of the convention for a third consecutive year. The speakers, Youcef Larbi of the Cree Mineral Exploration Board in Québec, Hugh Wynne and Rod Bushie of San Gold Corporation in Manitoba and Chief Glenn Nolan of Missanabie Cree First Nation in Ontario shared their expertise on recruiting and training, creating partnerships with government and community engagement.

"Manitoba Rocks", a mineral education school program, was held in conjunction



Science, Technology, Energy and Mines Deputy Minister John Clarkson thanks Harold Gibson for the Wind-up Luncheon address.

continued from page 5, Executive Director Message

on violations related to the Engineering and Geoscience Professions Act of Manitoba.

NEW WEBSITE & MEMBER DATABASE

Do any of you remember DOS or Microsoft Mail version 1.0? Well, I do. As a first generation personal computer user, I can remember cassette drives, 5 ¼ inch floppy drives, DOS, Commodore 64, and a few other "dinosaurs" of the computer world. The APEGM website has a lot of good content, but I have to admit, it's a dinosaur. No disrespect to those who developed the site years ago... it has served us well, but it is time to make a "quantum leap".

APEGM has contracted with Systems Programmer Andrew Reddoch to pour his heart and soul into a new member database and new website. The intention is to offer new automated features to members through a brand new site and upgrade the member database to current standards and readiness for future demands. Work has been underway for 4 months and I expect that the project will take a year to deliver. ■

In Memoriam

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

*Harold Kunmen
Lubomir Bulka
Donald Burdeny
John Thorsteinsson
Ka-Seung (Karl) Au*

Scope of Practice: Engineers and Architects

E. Hancox, P.Eng.

Where do we stand?

Have the Engineers and Architects of Manitoba finally resolved their differences with respect to scope of practice? Well sort of...

For those of you who may not be aware, there has been a long standing dispute between the Architects and Engineers in the Province of Manitoba over the right to design buildings that fall into certain categories. In short, buildings over a certain size and those that have certain occupancy types must have an architect's seal on the drawings.

The dispute arose from the point of view that only architects are qualified to interpret part three of the building code and, therefore, only they can design buildings that are over a certain size or that have certain occupancy types.

In a move to enforce the architects' act as it was written, the Manitoba Architects Association (MAA) initiated action to bring formal charges against a registered professional engineer for what the MAA viewed as providing architectural services. The action was subsequently dismissed in court. However, the MAA did not stop there. The following represents a brief summary of the events as they unfolded from September 2005 to July 2006:

1. September 16, 2005, Court of Queen's Bench allows injunction against the City of Winnipeg.
2. Drastic slowdown of the building industry occurs costing an estimated \$1 Million per day to the Manitoba economy.
3. Engineer's Count Campaign mobilizes to have the legislation changed to render the injunction invalid.
4. November 30, 2005, new legislation is passed. See the link <http://web2.gov.mb.ca/laws/statutes/2005/c04805e.php>
5. Legislation gives full authority to the Engineering Geoscience Architecture Inter-Association Relations (EGAIAR) Joint Board to implement the conditions of the new Act.
5. March 1, 2006, grandfathering criteria set.
6. June 30, 2006, deadline for applying to be grandfathered under the new legislation.
7. July 31, 2006, Sections 4-9 of the new legislation are proclaimed.

What has been going on since the proclamation?

Some data:

- 70 engineers responded on email they were interested in exploring their options for being grandfathered.
- 5 engineers in the end applied to be grandfathered.
- 3 were granted recognition certificates to continue practising in the disputed scope.

What was the cost?

Cost of the Engineer's Count Campaign and EGAIAR Joint Board: \$168,650. Contributions received from individuals and firms: \$50,270. And that's only monetary; which doesn't include the major amount of time or efforts given to this matter over the past two years.

Silver lining in an otherwise black rain cloud: Sections 4-9 of the new legislation allow engineering firms to hire an architect and provide both engineering and architectural services on a building design project. The public of Manitoba wins by getting an improved level of service from engineering firms.

We can thank the five engineering members of the EGAIAR Joint Board for volunteering countless hours to this effort: Ken Drysdale, Alf Poetker, Allan Silk, Doug Stewart and John Woods.

Look to the Keystone Professional for future updates on this matter. ■

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Engineering career?

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The Brown Sheet

National Professional Practice Exam

Deadline for application March 9, 2007.

Application form available at APEGM website
www.apegm.mb.ca/register/geninfo/ppeinfo.html

Deadline: March 9, 2007

Date: April 16, 2007

Waverley West – The Long Winding Road

Speakers: Paul McNeil, MPPI
Richard Tebinka, P.Eng.

This luncheon presentation will cover the transportation aspects of the new proposed Waverley West development. Areas covered will be:

- Plan Winnipeg Amendment: Approval process and Supporting documentation
- Area Structure Plan: Planning objectives, Developing the road network, and Staging
- Neighbourhood Structure Plan: MHRC Northeast neighbourhood

Date: March 13, 2007

Time: 11:30 a.m. - 1:30 p.m.

Cost:

\$10.00 pre-register
\$15.00 walk-up
\$6.00 student members

Location: Viscount Gort
Hotel, 1670 Portage Ave.,
Winnipeg, MB

An Investigation of Canadian Women Engineers: Exploring the Role of Educational Work experiences in Shaping Career Paths

Speakers: Dr. Sandra Ingram
Ms Irene Mikawoz, P.Eng.

What are the soft skill sone needs to succeed? Come and learn how the development of soft skills will impact your career!

This engaging and interactive presntation provides highlights from a 2005 study undertaken on the career mobility of female engineers at four Manitoba-based companies.

Specifically, cooperative and internship education programs are explored for the impact they have had on enhancing the acquisition of soft skills among women engineers and contributing to career success.

Break-out sesion to follow presentation.

Date: March 29, 2007

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

Cost:

\$5.00 pre-register
\$10.00 walk-up
student members free with
registration

Location: Lobby Boardroom,
135 Innovation Drive, Smart
Park, University of Manitoba

Manitoba's New Occupational Safety and Health Regulations

Speakers: Doina Priscu, P.Eng.
Victor Minenko

This luncheon presentation will cover the Act and will explain the new regulations as there are many references to engineers.

Doina Priscu and Victor Minenko will discuss the role of engineer as "prime contractor or consultant" along with the new and critical role for all engineers.

Please see the article in this issue of the *Keystone Professional* for more information on the new regulations.

Date: April 12, 2007

Time: 11:30 a.m. - 1:30 p.m.

Cost:

\$15.00 pre-register
\$20.00 walk-up
\$10.00 student members

Location: Victoria Inn, 1808
Wellington Ave., Winnipeg,
MB

□ Technology and Teamwork

Our conference promotes collaboration within the Manitoba technical communication community. Benefits of attending the conference include:

- networking with professional technical communicators and other industry representatives
- sharing knowledge and skills
- showcasing local talent
- discovering new tools for technical communication
- keeping up-to-date with technical communication trends and developments in Manitoba

The proceeds from the conference are used to fund scholarships for students in the Technical Communication Diploma program at Red River College. Two scholarships are awarded, one from the Society from Technical Communication, and one from the College.

Date: April 12 - 13, 2007

Location: Red River College's Princess Street Campus

□ Canadian Council of Professional Engineers Annual General Meeting

For more information, see CCPE's website at www.ccpe.ca.

APEGM is looking for volunteers for the Family Fun Night, May 25, 2007, hosted by the Association. For more information on the opportunities available, please contact Angela Moore at 478-3727.

Date: May 23 - 26, 2007

Location: Winnipeg, MB

□ Making Links Engineering Classic Golf Tournament

The first 144 registered golfers with accompanying payment will play.

As Quarry Oaks is a 27-hole facility, we may be able to accommodate up to 215 golfers. Entries and payments are to be submitted to the APEGM office by 4:00 p.m. Friday May 18, 2007.

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

Date: June 14, 2007

Time: start at 11:30 a.m.

Cost: \$175.00

Location: Quarry Oaks

Sponsored by Group Retirement Services

□ CDEN/CCEE 2007 Conference

The Canadian Design Engineering Network (CDEN) and the Canadian Congress on Engineering Education (CCEE) are meeting together for the first time in Winnipeg.

We invite you to join us to discuss issues related to engineering education and engineering design.

The meeting will feature sessions tailored to the specific interests of each group, but available to all those in attendance.

For more information, please see the website: cden2007.eng.umanitoba.ca/

Date: July 22 - 24, 2007

Location: Winnipeg, MB

New Members Registered November 2006, December 2006 & January 2007

T.J. Adelman (SK)	M.B. Crowley	J.J. Goff (ON)	D.V. Kaethler	G.D. Marjovsky	S.G. Scribner
A.J. Almeida	J.L. Cutter (AB)	J.E. Goodfellow (ON)	G.D. Kell (AB)	K.L. Markusson	R.M. Shead
S. Badeau (QC)	Z. Dawd	M.J. Gregoire	K.D. Ketchen (BC)	L.M.K. Melvin	D.S. Sidhu
B. Bagen	S.E. Dudding (ON)	J.R. Heninger (AB)	F.S. Khalil	S.G. Miller	Z. Song
V. Bakija	M.L. Fahey	P.G. Hillius	S.B. Kirby-McDougall	A. Mollaj (ON)	J.S.L. Sussman (ON)
R.S. Bali	T.T. Fok (AB)	D.A. Ho	T.J. Krahm	C. Olidis (ON)	G.M. Tydings
N. Bashir (AB)	S. Fortin (QC)	N.G. Hosking	P.F. Lamontagne	G.M. Owolabi	T.D. Worms
J.D. Bunda (ON)	C.T. Friesen	S. Ingimundson-	(ON)	C.E. Plato	X. Wu
G.J. Cassano	J.A. Gehrels (ON)	Campbell	R.M. Llanes	O.G. Preston	D.E. Zubert
H. Cen (BC)	C. Gheorghiu	A. Ivantchouk (ON)	K.D. Loucks (ON)	D.G. Quigley (ON)	
H.H.P. Chao	G.T. Gibbings	R.C. Janzen-Martin	H. Maathuis (SK)	N. Rahmaty	
H. Chung	T.W. Goettel (QC)	S.W. Johns	P.M. Mackie (AB)	K. Schmidtke (ON)	

Reinstatements November 2006, December 2006 & January 2007

G. Bienias (BC)	R.A. Coates (ON)	B.J. Deans (ON)	A.R. Forbes	J. Roik (BC)
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Members-In-Training Enrolled November 2006, December 2006 & January 2007

M.M. Al-Mamun	R.M. Dobson	D.S. Jhinger	K.N. Manchur	J.C. Rogelio	J.A. Wiebe
T.A. Bartkiewicz	D.W. Ducharme	N.E. Kamenev	D. Nouri	C.F.G. Rutherford	H. Zhao
R.E.J. Belbas	T.J.W. Dueck	A.J. LaCoste	O.A. Ojo	P.A. Schilling	P. Zmudzki
D.G. Boyd	A.D. Forward	C.R. Lavallee	T.R. Rajapakse	L. Sepulveda M.	
S.P. Campbell	A.D.J. Fuga	G.O. Legacion	B. Ratnayake	S.S. Sidhu	
R.W. Carroll	H.K. Ghamry	E.A. Lezen	V.K. Reddy M.	A. Smith-Windsor	
C.M. Clary-Lemon	P.M. Gould	J.C. Lopez	A.H. Redekopp	A. Stansell	
B.R. Cruickshank	G.L. Illaszewicz	M.J. Machnee	M.J. Rhyner	P.M.J. Tessier	

Member Resignations 2006

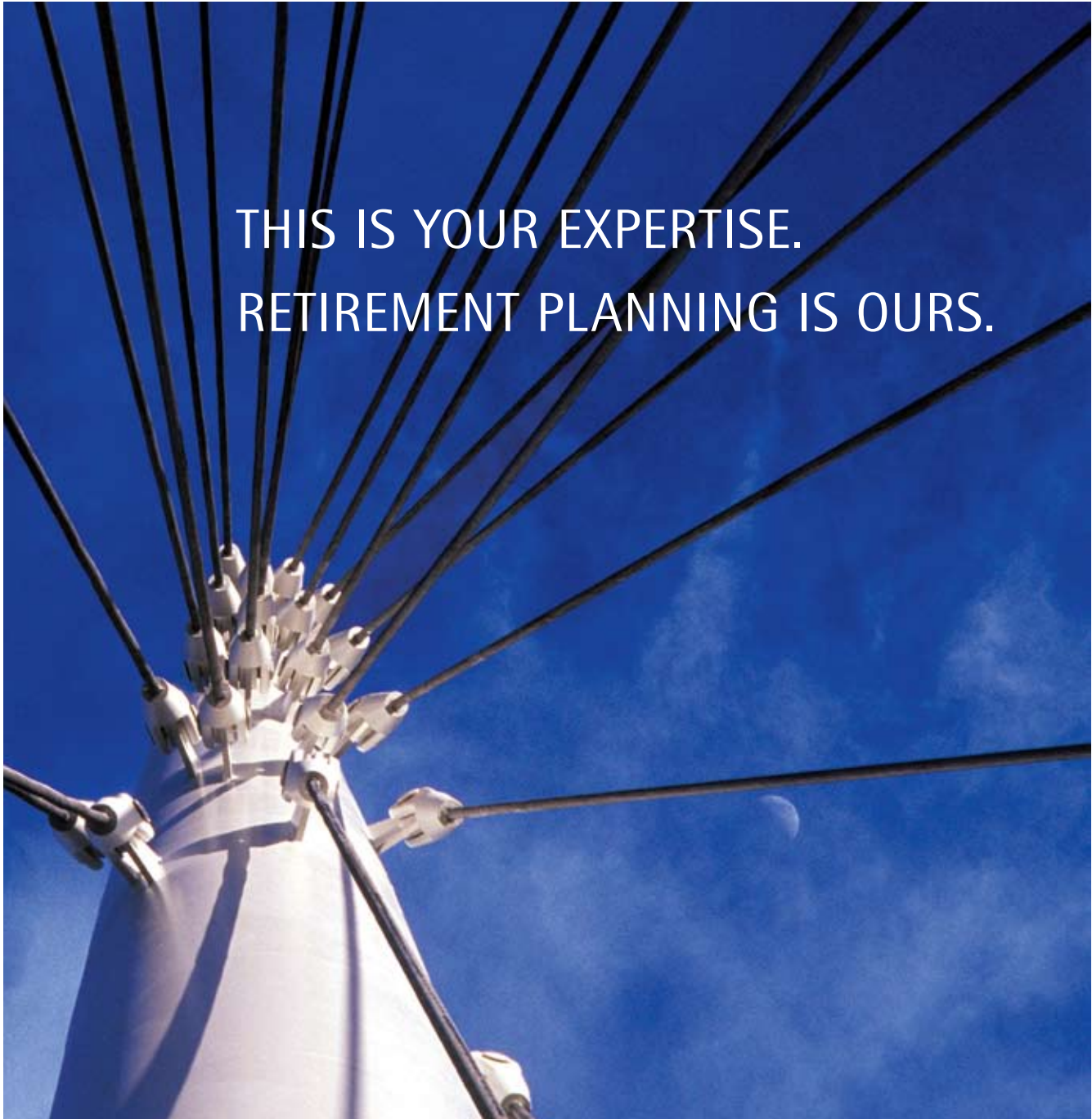
G. Atamanchuk	A. Duda	R.A. Halliday	D. Linten	D. Patton	W.A. Townsley
P.C. Baracos	C.J. Dufault	P. Handlovsky	R.J. Linten	R.O. Petanca	A.E. Uderstadt
C. Beaulieu	F. Dyck	T. Heidinger	A.K.H. Lohse	E.J. Philips	L.J. Van Dusen
W.A. Bullee	D.L. Fisher	L.F. Hiley	H. Mahony	P. Pitman	J. Van Gulck
J. Callum	M.N. Foot	L.M. Howland	J.E. McClung	G.G. Powell	C.L. Wenslaw
L.D. Campbell	I.G. Fraser	W. Jaegher	G.R. McGee	A. Rideout	D. Willock
E.C. Card	J. Gertzbein	S. Jankovic	I.H. McKay	C.S. Roberts	A.M. Wilson
G. Cavey	R.G. Gibson	M.J. Keerak	R.L. McKay	A. Schnersch	S.W.G. Yee
M.N. Chorney	D.L. Gordon	J. Kulchisky	N.J. Milliken	R.K. Storozinski	A. Zeegen
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T.A. Davenport	J.C. Greenhill	M.A. Lewandowski	S.A. Okolita	P. Tiley	

Member-In-Training Resignations 2006

A. Agrawal	D.L. Chaung	M. Jacobson	C.L.P. Searcy
M. Burgoyne	G.M. Desharnais	T. Matechuk	C.D.G. Tokarz

Certificates of Authorization November 2006, December 2006 & January 2007

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