Publications Mail Agreement Number 40062980

THE KEYSTONE PROFESSIONAL

In This Issue:

- Provincial Engineering & Geoscience Week
- Annual Awards Presentations
- PD Presentations
- Canadian Consulting Engineering Awards

APEGM The Association of Professional Engineers and Geoscientists of the Province of Manitoba

APRIL 2005
www.apegm.mb.ca

Achievement Award Presented to THE CITY OF WINNIPEG and WARDROP ENGINEERING INC. for the Esplanade Riel (Provencher) Bridge

The Certificate of Engineering Achievement was awarded to The City of Winnipeg and Wardrop Engineering Inc. for the Esplanade Riel (Provencher) Pedestrian Bridge, Winnipeg's first cable-stayed bridge. Esplanade Riel is a 5 metre wide, 200 metre long asymmetric dedicated pedestrian bridge with a main span of 110 metres. The bridge's signature feature is its transversely inclined single support pylon that serves as the anchoring point for the cable stays. The focal point of the bridge is the 370 square metre semi-circular enclosed centre plaza surrounding the southern portion of the base of the pylon. The centre plaza will house a restaurant, offering sweeping vistas of the Red River and surrounding community.

Beginning in 1998, The City, Wardrop and community stakeholders partnered in a comprehensive public consultation process that considered repair / replace alternatives for the aging Provencher Bridge, circa 1916. Guiding the process were requirements that the new vision for the bridge be: technically sound; cost-effective; environmentally responsible; reflect the needs of the adjacent communities and the city at large; and be understood and accepted by most of those affected. Public consultation partners unanimously recommended a New Paired Bridges alternative featuring a new vehicular bridge and a separate pedestrian bridge linking St. Boniface with The Forks.

Design requirements that Esplanade Riel be a meeting and gathering place for potentially thousands of people and incorporating the enclosed centre plaza were fundamental challenges during the analytical study to determine the most appropriate cross-section for the walkway girder. Over 20 different cross sections were considered, until the best combination of mass and flexural and torsional stiffness properties, meeting design goals and objectives was obtained. Working with a specialist sub consultant, the final cross section dimensions were developed. A 1:60 scale model of the bridge structure was built and wind tunnel tested to ensure acceptable aerodynamic behaviour.

Detailed design of the Esplanade Riel began early in 2002 and construction commenced in fall of 2002. Working together with the contractor, the City and Wardrop overcame significant challenges during construction to ensure the project was completed on schedule in fall of 2003.

A world class addition to Winnipeg's skyline, Esplanade Riel reestablishes the alignment of the city's historic grand boulevard - Provencher on the east and Broadway on the west. The city's new landmark is a demonstration of world-class engineering performed by Manitoba-trained engineers and is a tribute to the quality of the education and professionalism of all the engineers involved. ■

Bill Larkin (City of Winnipeg), Rick Haldane-Wilson (Wardrop), Allan Silk, Bill Ebenspanger (City of Winnipeg) and Doug Stewart (Wardrop).

THE KEYSTONE PROFESSIONAL

APRIL 2005

Published by the Association of Professional Engineers and Geoscientists of the Province of Manitoba

850A Pembina Highway, Winnipeg, Manitoba R3M 2M7

Ph. (204) 474-2736 Fax (204) 474-5960
E-Mail: apegm@apegm.mb.ca

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.

Publications Mail Agreement Number 40062980

New Members Registered January & February 2005

B.K. Arnold (UT)	J.B. Evans (BC)	M. Larocque (QC)	D.D. Stangeland
B.J. Bilton	J.M. Fimrite (AB)	S. Larosa (ON)	M.K.B. Thiessen
E.W. Bjornsson	M.L. Flynn (ON)	R. Mannem	E. Trebacz
S.B. Boulet	R.G. Gibson	D. Maodus (ON)	S.M. Waplak
F.M. Brogowski	A.J. Gies	J.C. McCaskill	J.W. Watkinson
A.W. Clifton (SK)	K.W. Grasdal (SK)	A. Seropian (ON)	M.J. Wensel
J.R. Cote (QC)	J.J. Gussmann (ON)	J.W. Sinclair (AB)	C.D. Wiebe
R.M. Dansereau	M. Jagadeesan (ON)	L. Siu (BC)	P. Wobma (AB)
M.D. Desjardine	K.R. Kivi (ON)	S.D. Spicer	

Members-In-Training Enrolled January & February 2005

M. Birouk	J.J. Goff	N.A. Penner	S. Tremblay
R.R. Buenaventura	D. Ignatow	C.E. Plato	R.C. Troeller
G.R. Connaughton	Z.M. Kazem-Moussavi	A. Pochanart	S.A. Wach
E.C. Deurbrouck	G.N. Roos	J.S. Walker	
T. ElMekkawy	J.B.D. Koehler	J.E.J. Shewchuk	A.J. Watts
Y.M.M. El-Sayed	J.K. Lovelace	J.G. Slipec	Y. Xiao
J.D.P. Fedirchuk	W.L. Marcinyshyn	S.L. Smith	
V.K.W. Fisher	T.T. Mitousis	R.J. Steinburg	

Licenses Issued January & February 2005

D. A. Keef (CA)

Certificates of Authorization

Areva T & D Inc.
DJF Engineering Ltd.
DLS Engineering Inc.
Elevator Systems Professionals (ESP) Inc.
First Dimension Engineering
g4 Engineering Inc.
Geotility Systems Corporation
M² Engineering
Randal Brown and Associates Ltd.
Woods Engineering

Notice

This is notice to the membership that the Council will be recruiting for the position of Executive Director over the next few months to fill a vacancy on the retirement of David A. Ennis, P.Eng., at the end of 2005. A recruitment company will be engaged and applications will only be considered if they are submitted through that company. Interested parties should check the APEGM website at www.apegm.mb.ca after April 1st for further information.

Arnold H. Permut, P.Eng.
Past President and Chair of Recruitment Committee

Blast from the Past a Hoax

Thank you to all of you who advised us that the Blast from the Past photo (February, 2005 Keystone Professional) was not an authentic photo, but indeed a hoax. While the Communications Committee endeavours to make sure that all material submitted to the Keystone Professional is factual, this one obviously slipped by our crack team of proofreaders.

Editor

In Memoriam

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

Thomas Roger Gledhill Joseph M. Magro

President's Message

A.D. Silk, P.Eng.

Last fall, I had the privilege of spending 24 hours in my van with Dave Ennis as we traveled to the Northern chapters of Kelsey and Thompson. On the segment of the trip between Flin Flon and Thompson, Dave took me down a logging road near Cranberry Portage to see a water control structure that he had helped build early in his career. Closer to Thompson we stopped to inspect a bridge that he was involved with. I don't know for a fact, but I am betting that I wasn't the first President to inspect the underside of that bridge or to travel down that logging road.

I was reminded of those memories on January 10th when Dave handed me a letter which announced his intention to retire at the end of this year. Dave will leave behind many reminders of his career. He has made his mark on two professions both locally and nationally.

Council is left trying to fill the void that Dave will leave behind. We have struck a Committee of Council to do the footwork for Council. This Committee, which is chaired by our immediate Past President, Arnold Permut, P.Eng., includes councillors from both professions and an appointed councillor. Council would like to be able to announce who the new Executive Director is at the Annual General Meeting this October.

The Carver governance model assigns a great deal of importance to the Executive Director. As I mentioned in my last message, Council develops ends statements for the Association, and defines the limitations that the Executive Director must operate within. The Executive Director then moves the organization towards Council's ends while operating within the limitations set by Council.

The main resource that the Executive Director has is the committee structure that reports directly to the Executive Director. It is likely that it will be the committee structure that sees the most changes once the new Executive Director has taken over. If you serve on one of the committees that report to the Executive Director, you should become acquainted with the ends table that is on the wall in our boardroom. The product of your committee should be referenced in the ends table. If it is not, there might not be justification to keep the committee active. I don't know if the new Executive Director will lessen the number of committees, however I would be surprised if a reorganization of the committee structure did not occur within the first couple of years.

In other Council news, Council has named Dr. Digvir Jayas, P. Eng. President Elect. Digvir was elected at the first council meeting of the year. This is the third year in a row that council has been able to elect a President Elect at the first meeting of Council. I believe that this is a sign of a very healthy Council. Kelly Gilmore, P. Geo. was named Executive Councillor.

Dr. David Witty delivered his final report detailing his recommendations on how to solve the jurisdictional conflicts between Architects and Engineers. Some of the recommendations have merit but others will require further revision before APEGM will be able to accept them. APEGM held a stakeholders meeting to receive suggestions on how we should proceed. To our surprise this meeting had representation from other associations including another professional association. The message I received is that APEGM should continue to champion the concept that gives the customer the freedom to chose which qualified professionals they wish to work with. This is a concept that we will continue to champion. ■

The Annual Student Networking Dinner

By: D.A. Siepman, EIT

The annual Student Networking Dinner was held on Thursday, January 27th, at the Inn at the Forks. There was a great turnout this year. A total of 68 Professionals were in attendance with representation from a variety of engineering and geoscience disciplines. Student turnout was very good as well, with a total of 100 Student Members attending the event. The geoscience students showed tremendous interest in the event; out of the 100 students, 28 were geoscience students. Unfortunately they outnumbered their professional counterparts five to one. An issue we will work at for next year's event.

The Dean of Engineering, Dr. Doug Ruth, P. Eng., welcomed everyone on behalf of the University and the President of APEGM, Allan Silk, P. Eng., brought greetings on behalf of APEGM and Council. We had the pleasure of being addressed by two speakers from Toastmasters; Ken Perrett and Sara Mosher. Ken gave an entertaining presentation on how we, as professionals, rely on each other for support. Sara Mosher spoke on networking and did a very good job of getting people communicating by running through some networking activities.

The evening went very smoothly, the Inn at the Forks provided a great meal and the feedback received, thus far, has been very positive. People enjoyed themselves and made valuable contacts for the future.

Thanks again to all who attended and helped make this year's event a huge success. We look forward to another successful event next year and invite all those who are interested in attending to contact the APEGM office.

Also, I would like to thank, on behalf of APEGM and the University of Manitoba Engineering Society (UMES), all of our table sponsors for their very generous support: Acres Manitoba, Cargill Limited, Alacatel Canada Inc., MTS Communications, SNC – Lavalin Engineers & Constructors, Manitoba Hydro, Earth Tech Canada Inc., and Hayles Geoscience Surveys Ltd. I would like to extend thanks to the UMES and Geo Club members, Trevor Bowden, and of course Jenny Borecky. Without their hard work the event would not have been the success that it was.

If there are any suggestions or comments about the event please forward them to Jenny Borecky at ***jborecky@apegm.mb.ca*** ■

Attention MITs

Do you have one lunch hour a month to spare? Do you want to find out what's going on at APEGM and have a say on what's happening with your program? Do you like sandwiches….

Well, you might be just the kind of person we're looking for.

APEGM would like to resurrect the MIT Committee, which has been on hiatus for about four months. We have a few current members, but can definitely use some more.

We're looking for about four to five dynamic MITs preferably near the beginning of their four-year program. Your mission, should you choose to accept it, would be to:

1. Attend a monthly lunch hour meeting (near the end of the month).
2. Give input on issues regarding the MIT program.
3. On a rotational basis, attend council meetings (at least the first part of them).

   [The council definitely wants to hear your voices!]

The committee is flexible and we understand that you have many other pressures. If you aren't able to make every meeting, that's certainly not a problem, but we want people who are able to contribute. Ideally, we are looking for a diverse group representing many different disciplines, and like all APEGM committees, we are always looking for GITs. (We could make arrangements for teleconferencing a GIT who lives out of town if necessary).

If you are interested in participating on this committee, please send us a short paragraph telling us why you might be interested and your background. Depending on the number of responses, we may not be able to have everyone serve on this committee but we will certainly keep you in mind for other APEGM committees. And yes, it counts towards professional service hours.

Please respond to ***prereg@apegm.mb.ca*** using the subject header: MIT Committee.

Sincerely,

Sharon Sankar, P.Eng.
Director of Admissions, APEGM.

Professional Development

Bill C-45 – Criminal Liability of Organizations

By: W.C. Boyce, APEGM Staff

On November 12, 2005, Curtis M. Unfried, B.A., LL.B, made a luncheon presentation to an audience of APEGM members, on the implications and ramifications of the Bill C-45 amendments to the Criminal Code.

Mr. Unfried opened the presentation by asking the audience how many had heard of this amendment to the Criminal Code. Of the 40+ people attending the PD event, approximately 40% had not heard of Bill C-45 amendments prior to receiving notice of the event. Curtis said that this was not surprising, as this bill received unusually swift passage through the Canadian Parliament and Senate (the bill passed three readings in three days in the Senate). Curtis then went on to provide the audience with some background on why the amendments were brought into being.

Bill C-45 was in direct response to the 1992 Westray mine disaster in which 26 men lost their lives. Curragh Resources, the owner of the mine, was charged with 52 non-criminal counts of operating an unsafe mine. Two of the mine's managers were charged with criminal negligence and manslaughter. A $30 million lawsuit was also launched against the Province of Nova Scotia. All were dropped eventually. This was seen by many as an "injustice". As a result, a public enquiry was called. The report of the enquiry, under the direction of Justice K. Peter Richard, concluded that the failure of Curragh and the Government inspectors to properly address safety concerns resulted in the disaster. The November 1997 report went on to recommend a review of the criminal law.

During the period between October 1999 and November 2002, the federal government issued a discussion paper and entered into consultations with various stakeholders. On June 12, 2003, Bill C-45 was introduced to parliament. It received Royal Assent in November 2003, and became law on March 13, 2004. It amended the Criminal Code by:

- Expanding criminal liability by creating a legal duty for anyone who has the authority to direct workers (to ensure their safety); and
- Setting out factors for the sentencing of corporations.

Bill C-45 requires those who are responsible for directing the work of others to take "reasonable steps" to prevent bodily harm to any person arising from such work. As a result, the class of personnel whose acts or omissions can supply the physical element of a crime attributable to an organization now includes all employees, agents and contractors. An organization may be guilty of an offence even if no individual within the organization has committed an offence. What checks have you done on your contractors? Do you know if they have a "notorious" reputation regarding safety in other provinces? Mr. Unfried suggests that when employing agents or contractors, an organization should make a contractual term to disclose previous convictions or involvement with regulatory authorities.

Under the Bill C-45 amendments, organizations may face the following fines:

- Summary Conviction Offences: Maximum fine increased from $25,000.00 to $100,000.00.
- Indictable Offences: No maximum on a fine the Court can impose.
- Charge of Criminal Negligence Causing Bodily Harm/Death is an indictable offence.

Curtis then had the following suggestions as to what an organization may do to minimize the potential liability:

- Establish a comprehensive safety program;
- Monitor compliance to ensure that workers / representatives are following through on protocol;
- Enforce the safety program so that workers / representatives take it seriously;
- Ensure that all employees / representatives are properly trained;
- Investigate safety related incidents properly and promptly;
- Take remedial and/or preventative action: be careful not to disturb an accident site until it has been investigated by the authorities;
- Document the program, compliance and enforcement – maintain a paper trail. This can be invaluable at a later date; and
- Establish an Accident Response Plan: notify the proper authorities promptly. This will help avoid problems if your safety officer is "away on vacation".

Mr. Unfried then went on to describe the first charge laid under the Bill C-45 amendments:

On April 19, 2004, a trench collapsed and killed a 38-year-old Toronto man. A contractor was supervising the deceased and another man as they repaired drainage foundation problem at a residence outside of Toronto. The men had been using a mini-excavator to dig a 12 foot trench at the front of a garage. The victim was working inside the excavation when the ground gave way and he became trapped by heavy soil. The supervisor was charged with one count of criminal negligence causing death. The supervisor's first Court appearance was on September 28, 2004, and he is still before the Courts.

Query: Did the supervisor show a marked departure from the reasonably expected standard of care in failing to prevent the death?

Mr. Unfried finished his presentation with the following conclusions:

- Only time will tell how much of an impact Bill C-45 will have on the organizational landscape.
- Be diligent. Follow protocol. Make safety / lunch box meetings a priority. Document them.
- Stick with safety programs past the initial meeting. Do not allow your safety program(s) to "collect dust."
- Decision-makers in an organization now, more than ever before, face the real possibility of criminal sanctions if they turn a blind eye to or knowingly direct or allow wrongdoings that create a danger in the workplace.

On behalf of the audience, William Boyce, APEGM staff liaison with the Professional Development committee, thanked Mr. Unfried for his informative presentation on this wide-reaching amendment to the Criminal Code.

To view Mr. Unfried's presentation, and other recent PD presentations, please visit the APEGM website and look for Selected Papers under the Professional Development section. ■

Members in the News

Congratulations to **Edward Shinewald, P.Eng.**, President, Melet Plastics Inc., recepient of the 2005 Canadian Manufacturers and Exporters (CME) Excellence Award; and to **Standard Aero** recepient of the 2005 Manitoba Export Award. The awards were presented by Manitoba ministers the Honourable Jim Rondeau, Minister, Industry, Economic Development and Mines and Scott Smith, Minister, Intergovernmental Affairs & Trade, and by Roy Cook, Chair, Manitoba Division, Canadian Manufacturers and Exporters, at a gala dinner at the Fairmont Winnipeg Hotel on Thursday, March 10th, 2005. The dinner and the presentation were the highlight of **"Manufacturing Week – 2005"** (March 6 – 12).

Ed has had a distinguished career in plastics manufacturing. In 1985, he acquired Melet Plastics, a small firm with 20 employees. Under Shinewalds's leadership, it has grown to 105 employees and sales have increased 25 fold. Besides being an industry leader, Ed is passionate about Winnipeg and promotes it as a great place to live and do business.

Standard Aero is a leading supplier of services to the global aerospace, defence and energy industries. It has 1248 employees in Manitoba and over 2600 employees worldwide. Besides being recognized as an "Employer of Choice" in Winnipeg, Standard Aero is an active member of a number of industry and community associations including CME and the United Way. ■

Provincial Engineering and Geoscience Week in Manitoba 2005

Activities in Winnipeg

By: B. Stimpson, P.Eng., Chair, Planning Committee for PEGW 2005

"I'll call my lawyer (accountant, doctor, optometrist, chiropractor…)" would not be an unusual statement to hear, but "I'll call my engineer or my geoscientist" would be quite out of the ordinary, wouldn't it? Engineering has been called "the profession hidden in plain sight" and the same may be said of geoscience. Engineering is all around us but like the fish swimming in water the public largely takes it for granted until the "water" is removed and its absence quickly felt. We are also surrounded by the products of geoscience. How many Manitobans know that a component of their Corningware comes from a mine in Manitoba?

Provincial Engineering and Geoscience Week in Manitoba 2005, February 25-27, gave our professions the opportunity to show and celebrate the kinds of things we do and to reach out to people of all ages. The primary venue was St. Vital Centre, itself a testament to engineering. Who is not impressed by the soaring roof and massive structural members in the Food Court?

Events at St. Vital Centre were promoted to the public through Hot 103 and A-Channel. Three spots on A-Channel's "Big Breakfast" gave opportunity to demonstrate the testing of spaghetti bridges, racing of robo-critters, and unveiling of APEGM's ecologically friendly cardboard chair for the Celebrity Competition.

Friday morning, February 25, saw the official opening at St. Vital Centre, emceed by APEGM's President, Allan Silk, P.Eng. John Woods, P.Eng., President, Consulting Engineers of Manitoba, Doug Ruth, P.Eng., Dean, Faculty of Engineering, Mr. Bidhu Jha, MLA, legislative assistant to Premier Gary Doer, as well as Allan, spoke to the value and importance of engineering and geosciences to the provincial economy and our high quality of life. The Government Proclamation of Engineering and Geoscience Week in Manitoba was then read by Mr. Bidhu Jha.

Speeches over, it was time for four invited teams - A-Channel, CKY, Design Engineering Program (U of MB), and Winnipeg Law Enforcement - to fight for cardboard chair supremacy. This year's challenge was to design and build a chair from a fixed quantity of cardboard and white glue. Load capacity, weight and aesthetics were evaluated and, despite the "serious" nature of these assessments, the teams managed to find ample opportunity for friendly jesting and demonstrative exhibitions of chair building prowess. This year Winnipeg Law Enforcement won the gold ($500).

The Spaghetti Bridge Competition has become a regular feature of the week. The excellent organizational skills of the Spaghetti Bridge Building Group were again seen on Saturday when around 100 youngsters vied for building the strongest bridge out of spaghetti and white glue. Parents, grandparents, and casual onlookers cheered each bridge on to reach the goal of excellence in load capacity.

On Sunday afternoon young children sat at tables in the Food Court and experienced the fascination of making floating concrete, a 10-minute electric motor, and candy and tooth-pick structures.

A new feature in this year's events was the Robo-Critter's competition on Sunday afternoon. Five competitors (3 engineering students, 1 high school student, and 1 professional engineer) first had to build a robo-critter ("car") from a kit before racing it in a time trial.

The last event of the "week" was the annual APEGM-sponsored IMAX theatre presentation. This year the movie was Wild California Adventure. There was something in this movie for everyone. Four year olds were mesmerized watching sky surfers, while, for those who can never miss a day without engineering, (I'm sure there are some!) there was a high level walk across the Golden Gate Bridge, San Francisco.

Throughout Friday, Saturday, and Sunday, thousands of shoppers stopped at display booths in St. Vital Centre. APEGM's booth was front-and-centre and the gateway to displays from the Consulting Engineers of Manitoba, MacDon Industries Ltd., Manitoba Industry, Economic Development and Mines, Manitoba Hydro, Robot Games of Manitoba (Science Council of Manitoba), Bristol Aerospace, University of Manitoba (Departments of Civil Engineering, Biosystems Engineering, Electrical and Computer Engineering, Geological Sciences, and Mechanical and Manufacturing Engineering), Smartpark, Engineers Without Borders, and the Industrial Technology Centre.

This annual event can only happen because of the involvement of 120+ people and their associated organizations. To all the volunteers,

Continued on page 7

Robo-Critters Contest

By: B. Stimpson, P.Eng.

A robot "playground" for children from Manitoba Robot Games has been a regular feature among the activities at St. Vital Centre in celebration of Provincial Engineering and Geoscience Week (PEGW). For this year's PEGW (Feb 25-27), the robots invaded some new territory at the suggestion of Herb Reynolds, Science Council of Manitoba and Manitoba Robot Games. The latter has developed a Robo-Critter kit (see ***www.scmb.mb.ca/pages/mrc.html***) which contains 2 3-4.5 volt DC electric motors, 2 rubber wheels, 1 formed wire motor mount, 1 remote controller with approximately 14 ft. of 4 conductor wire, and a 5" by 10" piece of Foamcore. PVC insulating tape, a hotmelt glue gun, glue sticks, a small bowl of cold water, a soldering pencil, stand, sponge, multicore solder, a very sharp knife, cutting board, and 3 "C" size batteries are also needed. Herb's suggestion was to have a competition to build a Robo-Critter from scratch on the Food Court Stage, St. Vital Centre, and to race it around a robot "playground" that consists of five "light towers" that must be bumped by the robot to switch on the light. The person who could steer his/her robot to switch on all five lights in the minimum time would be the winner.

Dr. Balakrishnan, P.Eng. (right), with the winning Robo-Critter contestants and their Robo-Critters.

Three engineering students (Trevor Bartkeiwicz, Patricia Bianchini-Ratmiroff, Marc Seewald), one high school student (Nishant Balakrishnan), and one professor and professional engineer (Dr. Balakrishnan) volunteered to find out who could best build and race a Robo-Critter (see photo). Each contestant developed distinctive machines. When the red flag dropped at the close of the races Marc Seewald had negotiated the course in the fastest time. It was a fun event for the public to watch and in the end all contestants were rewarded with a T-shirt or a toque from APEGM. Thanks to all five for giving up their Sunday afternoon to support Provincial Engineering and Geoscience Week in Manitoba 2005. ■

PROVINCIAL ENGINEERING AND GEOSCIENCE WEEK

Provincial Engineering and Geoscience Week in Manitoba 2005

Are you up to the challenge?

By: A.A. Poulin, P.Eng.

Students of all ages came out to prove they were up to the challenge at the 11th Annual Spaghetti Bridge Competition held on Saturday, February 26th, 2005, at St. Vital Center as part of Provincial Engineering and Geosciences Week (PEGW). Spaghetti bridges were also showcased on A-Channel's Big Breakfast, which aired on Monday morning, February 21st, and showed demo breaking of a few bridges.

Future engineers/geoscientists enjoying the Spaghetti Bridge Contest.

The students were challenged to design and build a bridge with a minimum span of 300 mm, built only of spaghetti and white glue and weighing no more than 350 grams. The bridge that could withstand the highest load would be the winner. The competition was open to Manitoba students in grades 1 through 12. Awarded were cash prizes of $50.00 for each grade winner. There were also two Grand Prizes, of $200.00 each, plus tickets to the IMAX presentation "MacGillivray Freeman's Adventures in Wild California," awarded to the overall winners from the two categories, grades 1-6 and grades 7-12. All prizes were provided by APEGM.

Although with a total of 79 entries, attendance may have been about average this year, the results were above average! Over the years, the trend has been for the grand prize winning bridges to be increasingly stronger, and this year was no exception. Posters were sent to the schools to help encourage entries, with the tag line "Are you up to the challenge?" Results showed that the students certainly were!

The winners from grades 1 through 6 reached peak loads ranging from 0.91 kg to 93.5 kg. There were even pre-schoolers and kindergarteners whose bridges broke at 17.18, 36.14, and 60.56 kg. The grand prize for the grades 1-6 category went to Holden and Kylie Bard, a grade 4 team from Dr. FWL Hamilton School, whose bridge broke at **154.88 kg** (or 341.45 lbs.)!

Another great turn-out at St. Vital Centre.

The winners from grades 7 through 12 reached peak loads ranging from 0.97 kg to 159.17 kg (only 4 kg more than the overall winner from grades 1-6). The grand prize for the grade 7-12 category went to Gabriel Nadeau, a grade 10 student from College Regional Gabrielle Roy School, whose bridge broke at **187.99** kg (or 414.5 lbs)! This was a very exciting and, in recent years, record setting bridge! It broke in a dramatic, non-ductile fashion and went out with a bang. The student behind the design was the returning champion from last year, whose bridge in 2004 gave way at 113.63 kg. The student is a returning competitor, who by analyzing, refining and modifying his design over the years, displays the skills of a true engineer.

Organizers Don Spangelo, P. Eng., Glenn Penner, P. Eng., Shane Mailey, P. Eng., and Adèle Poulin, P.Eng. would like to thank APEGM for their continued support of the event. We would also like to recognize the PEGW committee and Peter Roach for their assistance. Of course the day could not be pulled off without the help of our competition-day volunteers, who this year were: Cristian Orellana, Oscar Ramirez, Alice Rueda, Alison Weiss, Jelena Piplica, and Andrew McCorrister. ■

Grade 7 – 12 winning bridge.

Grade 1 – 6 winning bridge held by one of its designers.

Provincial Engineering and Geoscience Week in Manitoba 2005

Celebrity Competition

By: E.P. Hancox, EIT

The Celebrity Competition got underway at the St. Vital Mall following the kick-off to the 2005 PEGW. Once again, we had four celebrity teams competing for cash prizes which they could donate to charities of their choice. Competitors were from: CKY; A-Channel; Law Enforcement, consisting of members from the Winnipeg Police Department and the RCMP; and of course, celebrities in every engineers mind, venerated professors from the University of Manitoba. This year's competition consisted of the teams building cardboard chairs from identical materials kits provided by the PEGW celebrity competition sub-committee. The rules were simple. Using the materials provided, the chairs had to have a back and be suitable for an average adult. The entries would be judged on aesthetics, final weight, and ultimate strength.

Leading up to the competition, one committee member mocked up a test chair and it was suggested that we may have been a bit cheap on cardboard supply; the member reported the mock-up to be a bit flimsy. After some discussion, the committee determined that this could itself be a convenient method of judging. The chairs were to be subjected to increasing loads with points awarded for the amount of breaking weight. Besides, collapsing chairs would make for a colorful system of awarding points and we wouldn't have to issue an addendum. Excellent!

The competition began with introductions of each team to the adoring public and a declaration by the celebrities as to which charity would benefit from the fruits of their labour. Not to mention the genius of their designs. The first part of the event saw the team's designs judged on aesthetics and functionality. Doug Ruth, Dean of Engineering at the U of M, CEM president John Woods, and Bidhu Jha, MLA for Radison were kind enough to stay for the competition and act as expert judges for this portion of the competition. The judges awarded the points based on visual impact and apparent functionality of the chairs.

Once the scores were adjusted to reflect the true entry weights and duly awarded, a final part of the competition remained; strength. This would easily separate a tight field and blow the competition wide open. Or would it? Recall the committee member's mock-up? It turns out that the chair was actually strengthened before it was shown to the rest of the committee. Committee members sat on it, the heaviest of us even stood on it. Then discussion led to a clear way of awarding points… "Yeah, let's award points for the strongest to weakest cardboard chairs. It'll be a blast"! Well I'm here to report that the sum total of the bodybuilding weights we brought was not enough to collapse any of the chairs. The celebrities even took to mocking us outright by sitting and standing on their chairs. After the first team sat on their chair, the next team sat on top of the pile of weights sitting on their chair. Finally, the upstaging led to two members from Team CKY who took life and limb in hand and stood on top of the pile of weights that were resting on top of their chair. (see attached photo) Did I mention the television cameras were running for the duration? A near spill occurred when the weights slipped, but injury was avoided. Absolutely no one saw that coming; wink. Some unnamed competitor was heard suggesting team U of M's "substitute" chair could handle the weight. Can you say pie in the face?

In the end, all teams were awarded equal points for the (super) strength portion of the competition. Team Law Enforcement came in first place and will present their $600 earnings to their favorite charity. Team CKY and U of M tied and therefore split the second and third place prizes. Team CKY will forward their $200 award to Dreams Take Flight and team U of M will send $200 to the MS Society. A-Channel, missing higher ranking by a narrow margin, will present $50 to the Children's Hospital.

After thanking the participants and judges, a challenge was thrown out to all the teams for next year's competition. It seems that there was a penalty for earning less than the largest donation for one's favorite charity. Glen Cassie from A-channel was captured by the camera crews as he was escorted off the premises in hand cuffs. I wonder if he had to serve any time?

I would like to take a moment to thank all the celebrities and guest judges for their time and efforts. Also, a huge thank you to the celebrity sub-committee members: Jenny Borecky, Joanne Simpson, Reba Faunal, and Kevin Sim; who did all the work and made a certain sub-committee chair's job all too easy. ■

Team CKY risks life and limb.

Activities in Winnipeg

Continued from page 5

organizations, and APEGM staff who gave of their time in planning and implementing Engineering and Geoscience Week in Manitoba 2005 in the Winnipeg region, a big "Thank you."

Planning for next year's Engineering and Geoscience Week in the Winnipeg area will start in September. If you are interested in participating or would like to develop some activities in your area of the Province (if you live outside the Winnipeg region), call the APEGM Office at (204)474-2736. ■

Council Report

Thursday, January 20, 2005

By: A.N. Kempan, P.Eng. (Ret.)

TALKING TO MEMBERS-IN-TRAINING

The meeting of the APEGM Council was called to order at 11:00 AM. Proceedings commenced about ten minutes later when the required quorum of eight was established. Council was informed that Dr. Doug Ruth would be on hand at noon to receive a special gift.

Council reviewed and approved minutes of the meetings of October 14, 2004 and December 10, 2004.

President Silk reported on a vital ownership linkage, APEGM's relationship with its Members-in-Training (MITs). In May, 2004, Council had passed a motion inviting MITs to attend Council meetings as observers, and to bring forth their concerns about the program. Unfortunately, since MIT attendance at meetings has been sparse, on January 19th, President Silk accompanied by councillors, addressed MITs at a special meeting held at Canad Inns, Pembina Highway, to re-open the dialog with them. Councillors suggested improvements to the MIT program. Councillor Smith felt a history of the Association should be included, along with the original reasons for the creation of the Association. Executive Director Ennis said (APEGGA) sponsored a lunch and instant memberships for its MITs.

At lunch, Dr. Doug Ruth arrived, and he was presented a cheque for $190,000 by Past President Permut. That was the down payment on APEGM's $350,000 donation to the new University of Manitoba Engineering Complex. Lunchtime conversation touched on the interior design of the studio which will bear APEGM's name. Past President Permut made a tongue-in-cheek suggestion that perhaps we should hire an architect to design the lab.

After lunch, the Council conducted elections for President-elect and Member of the Executive Committee. Council nominated four candidates for President-elect: Councillors E.M. Ryczkowski, K.V. Gilmore, D.J. Taniguchi, and D.S. Jayas. Since the only candidate to let his name stand for the election was Councillor Jayas, he was declared elected.

The next item on the agenda was the election for the Executive Committee. As an inducement to run, President Silk jokingly reminded Councillors that their pension would be a full 70% of their salary as Councillor. Council nominated Councillors Blatz, Gilmore, Ryczkowski, and Taniguchi. Once again, only one candidate, Councillor Gilmore, let his name stand and was thus declared elected. In other years filling these posts took several meetings, but this time the process was quick and painless.

Next, the Council went into an hour-long in-camera session. After returning to an open meeting format, it reviewed the Manual of Admissions and discussed the mobility issue in particular. Council's concern was the possibility that mobility could be used to circumvent Manitoba's registration process. An engineer or geoscientist could shop for a province with liberal entrance requirements, register there, and then register in Manitoba under the mobility clause. Councillor Ryczkowski said mobility was necessary for doing business and President Silk acknowledged it was the number one issue for geoscientists.

Former Councillor Alf Poetker briefed the Council on the latest developments inside the Engineering Geoscience Architecture Inter-Association Relations (EGAIAR) Joint Board, the body responsible for defining the professional boundaries between engineers and architects.

At the end of the day, Council could not address all agenda items before it, so it decided to carry the remaining items forward to a future meeting. The meeting adjourned at 4:55 PM. ■

Professional Development

"The Case for Rapid Transit in Winnipeg"

By: A. A. Poulin, P.Eng.

Rick Borland, P.Eng., formerly of the City of Winnipeg, Transportation department presented "The Case for Rapid Transit in Winnipeg" to a room full of attentive listeners on January 19th, at the Holiday Inn South. He provided a 30 year history behind the planning for rapid transit in Winnipeg. Borland claimed Rapid Transit (RT) to be critical to a major city's quality of life. The presentation was informational, but Borland was careful not to get into the politics or decision making process, only the details of the proposal itself.

The proposal for Winnipeg is that of a Bus Rapid Transit (BRT) system. If you have visited other major cities that use rapid transit, you might be familiar with other forms of rapid transit. For example, Light Rail Transit (LRT) is used in Edmonton and Minneapolis. Subway/Metro transit systems are used in Toronto and Montreal. Ottawa uses a Bus Rapid Transit system, as do a number of U.S. cities.

What is Bus Rapid Transit? BRT is an exclusive corridor dedicated to a high speed, rubber tired, advanced coach passenger service system. Key services include speed, reliability, comfort and convenience. BRT operates at speeds very similar to LRT, reports claim it has better door to door service, and comes at a significantly lower capital cost than LRT. Operating and maintenance costs were not presented.

Critical to Quality of Life?

Borland's presentation touted that the RT is critical to Winnipeg's quality of life and is the key to getting people downtown and becoming the focal point of the city. RT would support key developments like Red River College (RRC) downtown campus, the Library, MTS Centre, the Forks museum, and the up and coming new Manitoba Hydro building. RT would connect higher education, and be the link between the UofM, UofW and RRC (downtown campus). RT was presented as the key to freeing up valuable land (reduced parking spaces) and key to reducing demand for road space.

BRT in Winnipeg would create approximately 300 person years of jobs. It would also support local businesses such as: New Flyer, the Heavy Construction industry, Engineers and Architects, to name a few. The presentation touched on how RT would help to improve the environment. The transportation sector accounts for 34% of green house gases. Passenger cars account for 27% of that. RT would help reduce the amount of passenger cars on the road. The presentation also claimed RT accommodates changing demographics (i.e. the elderly, aboriginal, and immigrants are typically heavy users of transit).

In order for transit to become competitive, certain "needs" were mentioned: the need to increase the speed of busses to be competitive with cars; the need to provide higher quality vehicles; the need to by-pass congested areas; the needs to simplify the network, ensure high visibility, frequent service, and real time services.

In 1999, research showed the public of Winnipeg supported BRT by around 75%. Open houses held in 2003/04 indicated that support was up to 79%. Of traditional non-users of transit, 72% said they would use RT, and for current users of transit, 46% said RT would increase their use of transit services.

So how much does BRT cost, and is it a sound investment? The presentation claimed it is, and apparently it has been a part of the plan for the city of Winnipeg since 1986. It was last included as part of

Continued on page 11

Annual Awards Presentation

Early Achievement Award

Presented to James A. Blatz, PhD., P.Eng.

James Blatz received his Bachelor of Science and PhD in Civil Engineering from the University of Manitoba in 1996, and 2000 respectively. His PhD studies included a term at the University of Alberta. He spent one year in post-doctoral studies as an NSERC Post-doctoral Fellow at the Royal Military College, Kingston. He then took a position as Assistant Professor in Civil Engineering at the University of Manitoba, where he teaches and researches in the area of Civil Engineering known as Geotechnical Engineering.

Dr. Blatz is an excellent teacher, an increasingly recognized researcher, a sought-after consultant, and a dedicated contributor to the profession.

Dr. Blatz teaches undergraduate and post-graduate courses in the area of soil mechanics and foundation engineering. His teaching evaluations are of the highest quality and have consistently been in the top 10% of the faculty. He has introduced new ideas to his courses and is exceptionally highly regarded by his students. In research, he works in two principal areas – the behaviour of unsaturated clay soils and the reinforcement of earth structures using geosynthetic reinforcement. Dr. Blatz is also doing fundamental research on the behaviour of sandbag structures using full-scale field tests. Many local news reports testify to the value of this work on the reliability and behaviour of these important flood-protection works in Manitoba. Most notably, his work on the fundamental behaviour of engineered clay barriers was published in a special edition of the primary research journal Geotechnique after a symposium on unsaturated soils in May of 2003. He has published over 30 articles in research journals and conferences. His work was recognized by being selected as one of the best papers in the Canadian Geotechnical Journal in 2003 and by several invitations for international collaborations.

In his short time at the university, Dr. Blatz has brought in more than $600,000 of research funding that supports an active research program with his graduate students. Research topics include the use of compacted stone columns for stabilizing Winnipeg riverbanks; studies on the properties and modeling of sand-benonite barriers for the safe underground storage of nuclear fuel waste; a joint international project on transportation geotechnics with the Universities Manitoba, Saskatchewan, British Columbia and Belfast; and the behaviour of earth- and rock-fill dams.

Dr. Blatz is the principal of his consulting firm Blatz Engineering and provides specialist services on numerical modeling and analysis of geotechnical engineering applications. He has served as a consultant to many consulting firms and public agencies on a wide range of projects including the Red River Floodway Expansion. He also works as a special consultant to a major developer of commercial software for geotechnical modeling.

At this early stage in his career, Dr. Blatz has an outstanding record of service to the profession. He has served APEGM on the Experience Review Committee, as Chair of the Communications Committee and now as Councillor. For the Canadian Geotechnical Society, he has served on the Executive of the Manitoba Section, co-chaired an international conference on computers in geotechnical engineering, chaired the student award competitions, and more recently the Education Committee, where he introduced 'Educate the Educators' for newly appointed professors. He serves on the Board of the North American Geosynthetics Society, the Technical Committee TC6 of the International Society for Soil Mechanics and Geotechnical Engineering, and as a reviewer for several leading research journals in soil mechanics. His work on these bodies has been recognized by awards from the University of Manitoba, the North American Geosynthetics Society and the Canadian Geotechnical Society.

Merit Award

Presented to Aftab A. Mufti, Ph.D., P.Eng.

Dr. Aftab Mufti is a Professor of Civil Engineering at the University of Manitoba. He is also the Program Leader and President of ISIS Canada, and first President of ISHMII (International Society for SHM of Intelligent Infrastructures). He was one of the key persons to initiate interest in the uses of Advanced Composite Materials (ACM) for Civil Engineering structures in Canada through his founding work as Chair (1989 to 1993) of the Canadian Society for Civil Engineering (CSCE) Technical Committee on the use of ACM in Bridges and Structures. With support from Industry, Science and Technology Canada and External Affairs Canada, and working through the auspices of the CSCE, Dr. Mufti was the leader of fact-finding missions to Europe in 1990 and Japan in 1992.

He is the founding Chair of the non-profit Advanced Composite Materials in Bridges and Structures Network of Canada (ACMBSN). In 1995, along with his colleagues, he was the founding member of the group that established the NCE for the ISIS Canada Research Network. Dr. Mufti has authored or co-authored two of five design manuals prepared by ISIS.

As a member of the Canadian Highway Bridge Design Code Technical Committee on Advanced Composite Materials, Dr. Mufti is playing a key role in having the national design codes modified to incorporate the use of new materials and design concepts in civil structures.

Dr. Mufti coined the new term "Civionics" as an explanation of the need to bring together the brightest minds in the fields of electrical engineering, electronics, and photonics to expand the envelope of civil engineering in the future design of civil infrastructure. He is personally directing the preparation of detailed specifications to be used by sensor suppliers and installers to ensure optimum placement and enhance the efficiency and reliability of the systems. The quality of his research in the emerging area of Civionics and SHM is unparalleled. While others have monitored components, few have taken the systems approach being championed by Dr. Mufti.

Dr. Mufti is the author or co-author of nine books and more than 200 publications in Bridge Engineering, Finite Element Analysis and Computer Graphics, and several Technical Reports. He is a Fellow of the Canadian Society for Civil Engineering, the Engineering Institute of Canada, the Canadian Academy of Engineers and the American Society of Civil Engineers.

Dr. Mufti is the recipient of many awards for his research and distinction in engineering as well as for his outstanding contribution to education, research and industry. In particular, the steel-free bridge concept, of which he is the principal developer, has been recognized with a number of awards, both national and international. These include the Pratley Award 1994, the CERF Charles Penkow Award (Finalist) 1996, the Association of Consulting Engineers of Canada (ACEC) Award 1996, the Lieutenant Governor of Nova Scotia Award for Excellence in Engineering 1997, the International Road Foundation (IRF) Award for the best paper 1997, the ACI Design Award 1998, and the Nova Award 2000.

Continued on page 11

THOUGHTS ON

Design

...and getting started

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

There is an old joke (old, not good) about a chemist, a physicist and an economist who were stranded on a desert island with a huge supply of canned goods but with no conventional means of opening the cans. After both the chemist and the physicist applied fundamental principles but failed to salvage the contents of an "opened" can, it was the economist's turn to solve the problem. The economist began with the statement, "first, let's assume we have a can opener".

The obvious intent of the joke is to ridicule those who are impractical in their search for solutions. But if you stop and think about it, doesn't the economist's approach mimic the way we start most design projects? Don't we begin the process by assuming something into existence so we can get on with the task of assessing the practicality of that "something"?

Those first assumptions often show up in sketches that are, at best, very conceptual. They represent the evolution of an idea, or ideas, that may eventually become a solution to the problem. Dimensions are relative and physical properties still only marginally relevant. But a potential solution is contained within the "thing" that is in the process of being created. Eventually the initial assumptions and the subsequent refinements will lead to something that either deserves more serious consideration or a concept that should be abandoned.

The first stages of refinement are usually defined by more assumptions and approximations. This is the stage at which engineers must decide which variables can be ignored without invalidating the evolving solution. Cyrus Shafai, in his Preliminary Year Circuits class, suggests that this represents the true art of Engineering. I tend to agree.

Based on the simplifications and constraints that have grown out of the initial refinement stage, relatively unsophisticated analysis is usually conducted to confirm the validity of the evolving solution. These "back of the envelope" calculations simply confirm that no serious problems exist with the logic that has brought the project along to this point. They also allow the identification of details that will become critical to the completion of the design task.

Once the potential solution has been refined to the point where it can be represented, with some level of confidence, by a solvable mathematical model, specific details become more important. In our design world of the 21st century we have access to any number of powerful analysis tools that permit us to refine our ultimate recommendations. But the analysis tools require input relating to physical constraints, material properties, loading conditions and any number of other types of data. Again those values are determined on the basis of "best guesses", or, if you prefer, assumptions.

The process now proceeds through any number of cycles with additional constraints, including, but not limited to, manufacturability/constructability, economics, safety, code/standards compliance, being introduced along the way. Eventually, given the creativity of the design engineer and the sophistication of the various analysis/design tools, a design emerges to provide a solution to the original problem. The solution will be characterized by a level of precision that is appropriate to the type of design involved, and a level of specification that assures the necessary transfer of information.

But in spite of the seeming sophistication of the end product, we must remember that design is about finding solutions to problems, and that requires a place to start. So, sophisticated analysis programs notwithstanding, like the fictitious economist, design engineers must first "...assume we have...". ■

Professional Development

Spatial Referencing Systems in Manitoba

By: D.D. Himbeault, P.Eng

It was a hungry crowd that attended the January 26 breakfast seminar on Spatial Referencing Systems in Manitoba, as the hotel kitchen staff were challenged to keep the buffet table in supply for the 42 in attendance. Nonetheless, the attendants were treated to an interesting presentation by Mr. David Richards from Manitoba Conservation, Survey Services Branch. Mr. Richards is responsible for the managing the Manitoba Spatial Reference Network, which serves as a spatial reference surface for all mapping, charting, water licensing, navigation, boundary demarcation, and other geo-referencing needs of the province.

Mr. Richards' presentation focused on providing an overview of the past, present and future of how we define position from a global perspective. He started by describing the basics for defining position and how it is important to first define a standard reference origin, directions, and for defining elevation, a reference surface. Generally, in a spatial reference system, the center of the earth and its axis of rotation is used as the reference origin and direction (e.g. longitude and latitude), and mean sea level is used to define elevation. Over land masses, the latter exists as a virtual model or numerical representation (such as an ellipse). Standard definitions for the reference origin and surface representation for North America started in 1927 with the North American Datum (NAD27), and reference markers based on this were propagated across North America using traditional line surveys originating from one location (Mead's Ranch). Since then, advances in technology have allowed more precise measurements of the earth in terms of its shape, centre of mass, and gravity field. In addition, more advanced and meaningful models are being developed to describe the reference shape of the earth, referred to as the Geoid model. This has lead to the development of newer definitions over time, namely, GRS80, WGS84, NAD83 (JUNE90), NAD83 (NMIP94), and NAD83 (CSRS).

Mr. Richards described the Geoid model used in the most current standard. The reference shape of the earth defined by the model is a gravity based equipotential surface which conceptually represents the shape of the earth if it were to be completely covered with water. Hence, with only minor discrepancies, it can be equated to represent the Mean Sea Level. Since gravity is not exactly constant across the globe, the reference shape of the earth has many bumps and depressions, which as Mr. Richards points out, albeit with some exaggeration of these features, makes the earth look like a potato.

One of the challenges in maintaining the spatial system stems from the legacy of the different standards. These standards are not all identical and not all users of spatial referencing use the most current standard. For example, the city of Winnipeg uses NAD83 (JUNE90) (the standard in use at the time a major survey initiative was undertaken), which is slightly different from the more current system adopted by the rest of the province. Water licensing agreements in northern Manitoba hold CGVD28 as the official vertical datum.

To close off the talk, Mr. Richards commented that the discrepancies between the different standards will not affect the average user; however where precision work is required, the observed differences will vary from 0.25 m to 1.2 m, depending on where you are in the province. ■

Awards Headline

Continued from page 9

Professional-in-Training Award

Presented to Dawn Nedohin-Macek, B.Sc. (Comp.E.), EIT

Dawn Nedohin-Macek received her Bachelor of Science in Computer Engineering at the University of Manitoba in 2002. Throughout her university years, she was active in the IEEE McNaughton Centre, specifically the Engineering in Medicine & Biology Society Student Chapter. Dawn's record of volunteerism can be traced back to her youth, and her involvement in the 4H Club where she was recognized with the Gold Watch Award in 1993, the Western Provinces Trip Award in 1994, and the distinction of holding the title of 4H Rally Queen for seven years. In high school, Dawn excelled scholastically receiving two university entrance scholarships: the Morden United Way Entrance Scholarship, and the University of Manitoba Entrance Scholarship. Ms. Nedohin-Macek is currently employed as a Process Control Systems Software Engineer-in-Training with Manitoba Hydro, where her primary role is to support, maintain, develop and administer computer based systems used by managerial, supervisory and other Energy Management Systems (EMS) staff on the Corporate subnets associated with the System Control Centre. Prior to accepting her present position, she completed one six-month rotation as part of the EIT program at Manitoba Hydro in the Energy Innovations Department assisting with research and evaluation of new technologies in the alternative energies sector in Manitoba.

Ms. Nedohin-Macek has already achieved excellence in all aspects of her blossoming career. She has an outstanding record of service to the engineering profession by selflessly dedicating her time and skills to serve others. At APEGM, Dawn is a member of the Women's Action Committee. At Manitoba Hydro, she is an active member of a number of committees including Safety, the Green Commuting Committee, Coordinating the Commuter Challenge, and most recently organizing and Chairing the Annual Transmission & Distribution Divisional Meeting Committee, where at the meeting she acted as MC. Dawn is actively involved in the local IEEE Winnipeg Section as the Chair of the Graduates of the Last Decade-GOLD-Affinity Group, as well as serving as a committee member of the Women In Engineering Affinity Group, and attending local section meetings. In 2003, Dawn led her GOLD group to international recognition by the IEEE as the recipient of the prestigious Regional Activities Board Outstanding GOLD Program Award. The GOLD committee was honoured for the outstanding contributions made to the advancement of IEEE by planning and promoting GOLD activities and the example it set in carrying forward the goals and objectives of the IEEE Regional Activities Board. In addition to the group IEEE RAB award, Dawn was selected as the 2003 recipient of the IEEE Regional Activities Board Section GOLD Leadership Recognition Award. She was individually recognized with a certificate that carried the citation: "For Outstanding Leadership of the IEEE Winnipeg Section GOLD Affinity group in coordinating GOLD and Student Branch contributions to the Section's 50th Anniversary Celebrations". Dawn has recently accepted the nomination to become Vice-Chair of the IEEE Winnipeg Section. In her spare time she participates in a program called MentorNet, where she regularly exchanges email with a teenage girl interested in science and engineering in Edmonton, Alberta. Her participation in the program was featured in an IEEE Spectrum magazine article, touting the benefits of mentoring and choosing engineering as a career.

Professional-in-Training Award

Presented to Jennifer St. Laurent, B.Sc. (Industrial Eng.), EIT

Jennifer St. Laurent is an Engineer-in-Training with MTS Communications. During the past three and a half years at MTS, Ms. St. Laurent has established herself as an exceptional Project Manager who was instrumental in developing and implementing a new system of New Product Introduction. Her work resulted in greatly improved time to market for the majority of new products as well as dramatically improved quality of product launches. Her efforts earned her the position of Program Manager responsible for eight Project Managers and a program of 200 Product Development projects.

In recognition of her excellent work, she was recently promoted to a Middle Management position as Portal Services Manager within MTS, where she reports directly to the Vice President Sales Customer Care. She and her team are responsible for developing, managing and operating all portal applications and content available through the MTS website as well as the TV portal.

Ms. St. Laurent completed a Bachelor's degree in Industrial Engineering at the University of Manitoba in May 1998, graduating on the Dean's Honours List. She is currently completing her Master's of Business Administration degree at the University of Manitoba on a part-time basis. In 2002, she completed a stringent program of study and work experience to become a certified Project Management Professional.

Ms. St. Laurent also maintains a demanding schedule of volunteer activities. She has been a key member of the APEGM Women's Action Committee since 2002, where she has organized numerous networking events, attended regional conferences and teleconferences, and represented the Women's Action Committee at the APEGM Annual General Meeting. Ms. St. Laurent also regularly volunteers her time to conduct outreach to local schools, promoting the importance of science and mathematics to junior high school students. Ms. St. Laurent has also been active for several years in the Winnipeg Chapter of the Wired Women Association, where she currently serves as the Chapter President. ■

The Case for Rapid Transit in Winnipeg

Continued from page 8

"Plan Winnipeg 2020 vision" and was adopted by city council (Murray's) prior to the new council and mayor (Katz). To compare the cost of BRT to other methods of Rapid Transit, a Subway/Metro system costs around $150 million per kilometer to build. Light Rail is between $40-60 million/km. BRT comes in much lower, between $5-15 million/ km. It was presented that the project has a 2.14:1 Benefit to Cost ratio, using a 10% discount rate last updated in 2004.

BRT for Winnipeg was supported by the three levels of government: the city's previous mayor (Murray) & council, the provincial government (Doer) as well as the Federal Government. A total of $50.0 million dollars was approved for Phase I, with the city's portion being $16.5 million of that. Borland claimed that the city in fact only required $9 million in additional dollars as the remaining was already committed to or spent. Phase I is the portion from UofW downtown to the Pembina/Jubliee crossing. The use of one lane on Pembina (during peak hours only) would be a temporary measure, until more money is secured for the next Phases of the project and more of the dedicated corridors could be built.

Do we need Bus Rapid Transit in Winnipeg? The presentation certainly claimed there is a strong case for BRT. In light of recent developments and initiatives for the downtown area, and the growing problem of increasing demand for road space, it seems that the city does indeed need some kind of improved, rapid transit system. ■

Professional Development

Human Rights

By: W. C. Boyce, APEGM Staff

On Wednesday, February 9th, 2005, Richard Ludwick, Human Rights and Respectful Workplace Advisor with Manitoba Hydro, made a presentation to APEGM members on the rights and responsibilities of individuals and employers under the Manitoba Human Rights Code. Rich who holds a Bachelor of Social Work (B.S.W.) and is a Certified Human Resource Professional (CHRP), worked for approximately 12 years as a Human Rights Officer with the Manitoba Human Rights Commission before joining Manitoba Hydro.

The Manitoba Human Rights Code, established in 1970, recognizes the right of all individuals to be treated on the basis of personal merit and to have equality of opportunity with other individuals. Human rights legislation has paramount status in Manitoba. This means that where there is a conflict with other provincial legislation, the Human Rights Code prevails.

Discrimination

Rich explained to the audience that The Manitoba Human Rights Code prohibits unreasonable discrimination in areas such as employment, housing, accommodation, the provision of services or contracts, and signs and notices. Employers, landlords and businesses are required to reasonably accommodate the special needs of individuals where these needs stem from the group factors specified in The Manitoba Human Rights Code e.g. disability, religion, sex. Ignoring these needs may result in lost opportunities for employment, housing, and services; and is simply not good business. In addition, failure to reasonably accommodate special needs is a form of discrimination prohibited by The Code, unless the accommodation would create an undue hardship for the business.

Making reasonable accommodations for those with special needs challenges us to adapt how things are done in order to get fair results. Rich went on to explain that the onus is on the employer, landlord or service provider to show that reasonable efforts at accommodation have been made. Accommodation which creates an undue hardship for the business, because of cost or other factors, would be unreasonable, and therefore not required. However, employers, service providers and landlords must take substantial and meaningful measures to eliminate / reduce discrimination by reasonably accommodating for the special needs of individuals, based on protected characteristics, to the point where accommodation would result in "undue hardship". ***"The use of the term 'undue' infers that some hardship is acceptable..." Mr. Justice Sopinka, Supreme Court of Canada.***

Harassment

Section 19(2) of The Manitoba Human Rights Code defines harassment as a course of abusive and unwelcome conduct or comment that is directed at an individual because of a group to which they belong or appear to belong. Rich went on to explain that harassment is any unwelcome conduct / comment in connection with the workplace undertaken or made on the basis of a characteristic in The Code which has a negative effect on any participant in the activity, who is the brunt of such activity, and which may be subtle or obvious.

Conduct or comments, that from the point of view of the victim and/or a reasonable person:

- are offensive or embarrassing,
- are humiliating or demeaning,
- are intimidating,
- undermine, sabotage or interfere with work/school/community participation,
- portray people negatively,
- result in scapegoating and blaming,
- although may be intended as "humour" have a very negative impact,
- based on one of the characteristics referred to in Section 9(2) of The Code are considered to be harassment under The Code.

Employers, landlords and service providers are legally obligated to take reasonable steps to provide an environment free from harassment. They should take active steps to discourage harassment in the workplace, and must do so if they are aware, or ought to be aware, that harassment is occurring in their place of business. Such reasonable steps may include:

- developing internal policies to deal with harassment,
- communicating these policies to all employees,
- informing the harasser that the behaviour will not be tolerated and that disciplinary action or dismissal may follow if the behaviour continues,
- taking disciplinary action where appropriate,
- providing protection and support for the victim and contacting The Manitoba Human Rights Commission for assistance.

Whether it is from supervisors, co-workers, or customers / clients, harassment is an attempt to assert power over another person.

Rich then went on to outline some of the actions considered to constitute sexual harassment:

- Unnecessary physical contact
- Leering in an intimidating manner
- Unwelcome remarks, taunts, and jokes
- Demands for sexual favours
- Displaying pornographic or other derogatory material

Rich went into the responsibilities of both management and employees to try to ensure that harassment does not take place in the workplace. It is the responsibility of management to provide a work environment that is free of harassment for all employees. It is the responsibility of each employee to respect the rights of others, and to maintain a work environment that is free of any action, deliberate or unintentional, that might be interpreted as harassment. Any employee being harassed should immediately inform the harasser that the action(s) must stop and/or advise someone in authority that they are being harassed. This person has the choice to inform the harasser to stop, or to advise someone in authority of the situation.

Rich listed some of the consequences of harassment in the workplace:

- a poisoned work environment
- high employee turnover
- low morale followed by a drop in productivity
- potential damage to the corporate image
- injury to feelings and self-respect
- compensation for lost wages
- the unknown variable cost

Rich concluded his presentation by emphasizing that ensuring that basic human dignity is respected in the workplace or business is the key to avoiding discrimination or harassment. Rich indicated that if anyone had questions regarding the Manitoba Human Rights Code, or wanted advice or assistance regarding any questions of discrimination or harassment, that they should contact the Manitoba Human Rights Commission, as they are there to assist both employers and employees.

Rich then opened the floor to questions from the audience, of which there were several pertinent to the presentation.

On behalf of the PD Committee, Hilmi Turanli thanked Rich Ludwick for his informative presentation on The Manitoba Human Rights Code. ■

Information on the Manitoba Human Rights Code may be obtained from the Commission's website: ***www.gov.mb.ca/hrc/english/index.html***

APEGM VISION

APEGM is the leader and a facilitator of the process that ensures excellence in engineering, geoscience, and applied technology for the public of Manitoba.

Professional Development

2005 Leadership Development Seminar

By: R.D. Wizbicki, EIT

The 2005 Leadership Development Seminar was held on Thursday, February 3, 2005 at the Inn at the Forks. There was an excellent turnout of 53 professional APEGM members, 20 members in training and five non-members for a total of 78 attendees who all showed up for three presentations pertaining to leadership development.

Benita Stafford-Smith started out the day with a presentation of her "Six Steps to a Successful Attitude." The first step was to "develop awareness". To do this, each of us in attendance was asked to complete a "Clean Sweep" assessment. This consisted of 100 true/false questions in four sections to help each of us develop awareness of our physical environment, our health and emotional balance, our finances (money) and our relationships.

Once we completed this questionnaire, we moved on to Step 2: Take Responsibility and Step 3: Change What You Can. This included taking three questions from our lowest rated section, which we answered false to. For example, "my work environment is productive and inspiring," I'm sure a lot of people would answer false to this one, and setting a time frame for when we will change this by. Step 4 was "Let go of what we cannot change." A lot of people, if not all, say they should do things. By saying we should, we remove the pressure of actually having to do it right away. This "should," continues to burden us because we keep thinking we should do it. The message that step 4 communicates is that successful people don't have a lot of "shoulds". The last two steps, Step 5 and Step 6 were "Decided to be Happy" and "Continue to be Happy." This included the exercise of listing characteristics of what we wanted to be and the habits we could perform daily to keep us on track to becoming successful.

After a break for lunch, Lew Bayer, of The Civility Group Inc. gave us a short presentation on corporate courtesies which touched on topics from how to handle yourself at a business or dinner meeting to which side you should wear a name tag on when at a networking event, which it seemed to me that at least half of those in attendance didn't know which side was correct. It's the right side by the way. Ms. Bayer discussed corporate courtesies as well as polling her audience in a true/false quiz about mixing business with pleasure. We were also reminded that we should always carry business cards everywhere we go because you never know when a networking opportunity may present itself in which you will want to give one to someone you meet.

Following the information on corporate courtesies, Court Stevens, of Stevens Consulting Group Inc., based in Victoria, BC gave us some information on Strategic Leadership Development. Stevens Consulting Group Inc. (***www.stevcon.com***) offers a wide range of courses on business and management processes associated with procurement management.

In his presentation, Mr. Stevens discussed the impact that the leadership of an organization has on the functions of that organization. He started out by using quotes from people such as Albert Einstein and Richard Farson to discuss the characteristics that leaders of an organization should possess; whether that leadership is a single person or a group of people. Mr. Stevens emphasized how leadership is not about having power but about how "The strength of a leader is the ability to elicit the strength of the group;" a quote from Richard Farson. He also touched on how the leader(s) should be someone who has the ability to step outside of their comfort zone, into a zone of influence/risk, in order to address a concern, which would in turn expand their zone of comfort. This part of the presentation was ended with a discussion of the roles and considerations of those involved in the leadership of an organization.

The second part of Mr. Stevens' leadership discussion covered the types, styles, structures and cultures of organizational leadership which included some words about how leadership has changed over the past while, which he exemplified with some of his corporate experiences as well as what he experienced in a 22 year military career. To finish off the day, we participated as a group, in an activity on succession planning, the planning and management of a change occurring in an organization. ■

Student Members to Watch

By: A.R. Raichura, EIT

Gary Ng is a 3rd year electrical engineering student at the University of Manitoba who is also pursuing a minor in Business. He is also a recipient of the University of Manitoba Leader of Tomorrow Scholarship. Although still a year away from graduation, Mr. Ng has already gained considerable experience in the Telecommunications industry. His experience has included projects with MTS, Bell Mobility, Fido, Rogers, Redknee Inc, Nokia, and Vodafone. Mr. Ng has also been involved in overseas work including projects in Spain, Austria, Iran, Italy and Germany, where in Munich he was on the team that deployed the state-of-the-art city wide broadband wireless internet service.

Gary is also involved in the University of Manitoba's Engineering Society (UMES) as the Director of Professional Relations. The position seems to be tailor-made for him; where his entrepreneurial and leadership skills enable him to enhance and leverage UMES's professional image and convey a confident and business-ready student body. One of his more recent projects in this position was to plan and supervise the 2005 APEGM Student Networking Dinner.

Mr. Ng is extremely active in his community and has been recognized with two citizenship awards and a provincial citizenship award nomination. Even with his hectic schedule, he is still heavily involved with his community which includes providing Saturday math classes for 20+ Grade 10 and 11 students, coaching badminton, and volunteering with the MS Society, Children's Festival, Children's Wish Foundation, and Alzheimer's Association. In his "spare time", he even found it in himself to write a book!

Given Gary's growing industry profile in digital media connectivity design, communications software development, and global corporate sales, Gary is sure to be one of the up-and-coming young innovators in the Telecommunications industry. ■

Meet Your New Councillor, Ed Ryczkowski

By: M.E. Baril, P.Eng.

Ed is somewhat new to the Association's administrative activities but previous involvement has included time spent on a sub-committee tasked with developing guidelines for Electrical and Controls System Engineering to be used by APEGM. In his first four months on Council, Ed has been impressed with the large number of issues that the APEGM Council must deal with on a monthly basis. There are currently several important issues before Council, many that have an origin in the previous century such as the ongoing negotiations with the MAA, for which Ed hopes to make a contribution on the way to resolution of this issue. Knowing his background, experience and knowledge in professional engineering in Manitoba, I have no doubt he will have ample opportunity to share these attributes with the other Councilors to further APEGM's goals of ensuring that engineering in Manitoba is done in a safe and professional manner. Ed has previous experience for his role as a Councilor, having served for a number of years on the Consulting Engineers of Manitoba's Board of Directors.

Ed was born and raised in Winnipeg, graduating with his degree in Electrical Engineering from the University of Manitoba in 1973. During his 4th year of undergraduate studies, Ed was awarded an NRC scholarship to pursue a Master's degree. Ed elected to work for two years before starting his graduate degree, working at Ontario Hydro and Teshmont Consultants Ltd. He joined APEGM in 1973, and received his P.Eng. designation in 1975. He returned to the U of M, graduating with his Master's in 1977. He returned to Teshmont and worked there until the work on Bipole 2 for Manitoba Hydro began to wind down. He then settled in at UMA, with a brief stint at Honeywell Controls as an application engineer in between. He was with UMA as an electrical engineer from 1979 to 1984, before joining the City of Winnipeg Water and Waste Department as a process control and electrical engineer. In 1990, he rejoined UMA as a senior electrical engineer and project manager, eventually becoming Department Head. During this period of time, Ed worked on a significant project, the Manitoba Hydro Thermal Life Assurance project at the Brandon and Selkirk generating stations. It involved the complete rehabilitation of all of the existing control systems and associated electrical systems at each plant. It was a technically challenging and rewarding endeavor with the opportunity to meet and work with many local professional colleagues. In 2000, Ed joined Earth Tech as a Senior Electrical Engineer, before joining SNC-Lavalin as the Electrical Department Head in 2002, which is his current position.

During his early work experience, Ed met and married his wife of 20 years, Cheryl. They have two children; Kathryn (15) who is currently in grade 10, and Michael (13) who is in grade 8. Ed enjoys keeping busy and fit outside of work by cycling and canoeing in the summer months, and cross country skiing during our long Manitoba winters. I have even been witness to his strapping on skates and hockey equipment and playing some pick-up hockey.

New Councillor Ed Ryczkowski, P.Eng.

Having worked with Ed at SNC-Lavalin, I have seen his knowledge, experience and leadership qualities in action and have no doubt that he is, and will continue to be, a great asset to the APEGM Council. ■

Meet Your New Councillor, Patrick Lengyel

By: D.J. Etcheverry, GIT

Born and raised in the Flin Flon area, and now working as a consulting geologist out of Winnipeg, Patrick Lengyel has had the opportunity to work, and often live, out of every major mining centre in Manitoba. Mr. Lengyel has also worked throughout most parts of Canada and internationally in Zambia, Guyana, the United States, and the Caribbean. Although well travelled, Mr. Lengyel keeps a strong sense of community through his family as his wife, Tanis, a teacher in the Pembina Trails School Division and his two children, ages 10 and 7, attend school and play hockey in St. Vital.

After graduating in 1988 from the University of Manitoba, with a B.Sc. in Geological Sciences, Mr. Lengyel worked in Winnipeg for several years for Noranda and then went overseas to Africa and South America. He began his current consulting career in 1994 where he provided exploration support to major, mid-tier, and junior mining companies, as well as private investors. To date he has worked on the exploration of precious metals, base metals, bauxite, industrial minerals, and diamonds.

When the legislation was being passed to incorporate geoscientists into APEGM, Mr. Lengyel was invited to participate in one of several ad hoc committees convened by APEGM to deal with the details of incorporating geoscientists. He served on the SPRGM Task Group from 1997-1998, followed by the Geoscientist Admission Committee in 1999. Upon completing his registration, he volunteered for the Communications Committee (2000-2004) and Salary Review Committee (2000-2003). He was asked to consider running for Council in 2004 and was elected last fall.

Mr. Lengyel has a clear view of his role on Council, "I think that APEGM provides tangible benefits to its geoscience community and that those benefits can be improved. It is my intention to follow through with my platform goals of improving professional development opportunities for geoscientists in Manitoba, including in remote communities. I also would like to see APEGM facilitate improved public education and awareness of geoscientific and engineering issues Province-wide. I think there is a leadership role that APEGM could fill in providing support for curriculum development at all education levels and in developing an online database of education materials." He went on to say that, "it has been my experience that institutional improvements never happen as fast as we would all like. I am going to do my best to improve the Association. Hopefully the geoscientist membership will agree on the benefits and lend their support."

Mr. Lengyel believes that mobility for geoscientists is very important and that Council is facilitating this very well, "One of the biggest surprises in Council has been the strong determination, particularly on the part of the President, to improve inter-Provincial mobility for its geoscience membership. I had expected there might still be some uphill work required, however, it appears that a working solution is under review and I am confident it will satisfy the needs of most members in the short term." Mr. Lengyel is also impressed with APEGM's drive towards becoming more involved in the geoscience community, " Council has indicated a desire to work closely with CCPG on outstanding issues. My overall impression is that there is a great deal of support for (APEGMs) geoscientist membership."

New Councillor Patrick Lengyel, P.Geo.

Since being elected, Mr. Lengyel's view of Council has changed significantly, "Council uses an Ends-driven governance policy and that is a new management process for me. Council reviews issues and forwards directives, through the President, to the Executive Director. The Executive, through its commit-

Continued on page 15

Meet Your New Councillor, Jim Miller

By: A.A. Poulin, P.Eng.

Jim is an employee of Standard Aero, where he is the Director of Engineering for the LEPU (Large Engine Product Business Unit). The election to the APEGM Council is Jim's first involvement with the Association.

Jim has worked at Standard Aero since the fall of 2002, and this is his first time living in Winnipeg. Jim went to the Royal Military College in England where he obtained his Mechanical Engineering Degree in 1983. He spent three years in the Air Force, after which he went back to school to obtain his Masters Degree. He completed his M.Sc. in Aircraft Vehicle Design in 1989 at the Cranfield Institute of Technology (CIT) in the UK. He then spent almost 10 years in the Structural Engineering sector in the Air force, living mostly in Ontario. In 1998, he went to work for Comtek Advanced Structures in Burlington, Ontario. Comtek Advanced Structures is in the business of repair, engineering and manufacturing of structural and interior aircraft components made from advanced composite materials; they support airlines and aircraft operators worldwide. Following his time with Comtek, Jim moved to Winnipeg where he now works for Standard Aero; a supplier of services to the global aerospace, defense and energy industries.

Jim is originally from what he calls "northern" Ontario, he's from Manitouaning by North Lake Huron. He married his high school sweetheart, and she followed him on his journey to England and back to Ontario. They have three children, one boy and two girls. Jim enjoys running and biking, and he commutes to work when the weather permits (biking being his preferred method). His favorite sport is basketball which he plays and used to coach.

While Jim was living in Ottawa, he was involved with the CASI (Canadian Aeronautics and Space Institute) and lectured at Carleton University. It was through his involvement there at the university that his interest in the relationship between education and the practical world (the working world) was peaked.

As councillor, Jim not only represents the Aerospace sector at APEGM. He would also like to strengthen the relationship between APEGM and the University of Manitoba. He has a personal interest in the curriculum education and development. His interest is to help bridge the gap between high caliber graduates and their readiness for industry. ■

New Councillor Jim Miller, P.Eng.

Association of Consulting Engineers of Canada

Press Release

The winners of the Canadian Consulting Engineering Awards 2004 were recently announced at a gala celebration at the Fairmont Chateau Laurier in Ottawa.

The annual awards, launched 36 years ago, are the most important national mark of recognition for engineering projects completed by private consulting firms.

The 11 winning projects, located in Canada and around the world, are chosen for their technical innovation, environmental and economic benefits, and project management expertise.

The jury consisted of a panel of nine eminent engineers from across Canada. The chair of this year's panel was Ms. Sheri Plewes, P.Eng., Vice-President, Contracts and Acquisitions with TransLink, the transport authority for the Greater Vancouver Regional District.

The awards are co-sponsored and organized by the Association of Consulting Engineers of Canada and *Canadian Consulting Engineer* magazine.

WINNERS

Schreyer Award (chosen as the most outstanding technical project overall)

Restart of Units 3 & 4 at the Bruce "A" Nuclear Power Station, Kincardine, Ontario
by Acres-Sargent & Lundy-Fox (ASLF), Oakville, Ont.

Awards of Excellence

Ottawa Macdonald-Cartier International Airport Expansion *(joint award)*
by GENIVAR, Nepean, Ont. (for the terminal's structural design)
by Marshall Macklin Monaghan, Toronto and J.L. Richards & Associates Limited, Ottawa (for the overall project management)

Central City – Three Timber Structures, Surrey, B.C.
by Fast + Epp, Vancouver

Excavation for the Renovation of the Library of Parliament, Ottawa
by Golder Associates Limited, Mississauga and Ottawa

Honda Manufacturing Plant – A2 Project, Lincoln, Alabama
by Giffels Associates Limited, Toronto

Esplanade Riel Pedestrian Bridge, Winnipeg
by Wardrop Engineering Inc., Winnipeg

Malana Hydroelectric Project, India
by RSW International Inc., Montreal

Chute-à-Caron Hydroelectric Dam Rehabilitation, Saguenay, Quebec
by SNC-Lavalin, Energy Division, Montreal

Little Mountain Reservoir Reconstruction, Vancouver
by Sandwell Engineering Inc. with Associated Engineering (B.C.) Limited, Vancouver.

Crowchild Trail Corridor Improvement, Calgary
by Clifton ND Lea Consulting Inc., Calgary

Land Administration in Landmined Areas of Cambodia
by McElhanney Consulting Services Ltd., Vancouver and GeoSpatial International Inc., Victoria, B.C.

All projects are published in full in *Canadian Consulting Engineer's* October-November 2004 issue.

Beaubien Award

The Association of Consulting Engineers of Canada (ACEC) also presented the Beaubien Award to Mr. Benno Ernest Novak, P.Eng.

The Beaubien Award is presented annually by ACEC for individual lifetime achievements and contribution to the engineering industry and to the association. Mr. Novak, a resident of Edmonton, Alberta, was recognized for his contribution to the consulting engineering industry and to society as a professional engineer, international committee member, urban planner, and as an artist and musician.

The Association of Consulting Engineers of Canada/Association des ingénieurs-conseils du Canada (ACEC/AICC) is the national association of consulting firms that provide engineering and other technology-based intellectual services. Visit ***www.acec.ca***

Canadian Consulting Engineer is a bi-monthly magazine for engineers in private practice. It is owned by the Business Information Group of Toronto. Visit ***www.canadianconsultingengineer.com.***

For more information and images, contact: Bronwen Parsons, Editor, *Canadian Consulting Engineer* magazine, Toronto. Tel. 416-510-5119, e-mail ***bparsons@ccemag.com***, or Claude Paul Boivin, President, Association of Consulting Engineers of Canada, Ottawa. Tel. 613-236-0569, e-mail ***cpboivin@acec.ca*** ■

New Councillor, Patrick Lengyel

Continued from page 14

tees, carries out those directives. Initially, I thought I might play a role in both deciding and implementing policies. Now it appears that my role is predominantly one of deciding policy, not carrying it out." He added that, "Part of the process also requires that Council speaks through one voice, the President. Hopefully geoscientist members will understand that although there may be a lack of communication from their elected representatives, we are still working hard to make their needs known to Council."

Mr. Lengyel emphasises that, "The Association requires volunteer support to carry out its mandate and I think members have a responsibility to provide that support to the degree that they can. Ultimately, a solid professional association reflects back on its members." ■

EXCLUSIVELY FOR ENGINEERING PROFESSIONALS

NEW choices make it easier to protect you and your family!

More than 48,000 of your peers have chosen the protection of insurance plans sponsored by the Canadian Council of Professional Engineers.

New Term Life coverage maximums and rate reductions make protecting your loved ones more affordable. And you can look forward to greater support for your financial security, now that Manulife Financial has added the popular CCPE-sponsored Disability and Health & Dental coverage to the choices it offers you!

Choose the coverage YOU need from this expanded range of Plans:

REDUCED RATES!

Term Life Insurance provides reduced rates for volume purchases, and up to $1.5 million in coverage, to ensure the financial future of those who depend on you.

FIRST TIME OFFERED!

Health Care & Dental Care pays eligible expenses over and above those paid by your government health plan.

FIRST TIME OFFERED!

The Disability Income Replacement Plan offers you a replacement income of up to $10,000 a month while you are disabled and unable to work.

FIRST TIME OFFERED!

The Business Overhead Expense Plan could reimburse you up to $8,000 a month in ongoing business expenses while you are totally disabled.

Major Accident Protection offers a lump sum benefit of up to $500,000 each for you and your spouse to help you cope with the hardships of a sudden, debilitating accident.

Critical Illness Insurance offers a lump sum payment of up to $1 million, to spend any way you choose, if diagnosed with any of the 18 covered life-threatening conditions.

Take advantage of these exclusive Plans today. After all, 48,000 engineering professionals can't be wrong! Contact us today!

Call toll free

1 877 598-2273

Monday through Friday from 8 a.m. to 8 p.m. ET.

Or visit us on the Web at:

www.manulife.com/KP

For members of:

APEGM

Sponsored by:

Canadian Council of Professional Engineers
Conseil canadien des ingénieurs

Underwritten by:

Manulife Financial

The Manufacturers Life Insurance Company