THE MANITOBA
Professional Engineer
December 1997
APEM

Meet Your New President – Peter Washchyshyn, P.Eng.

By: J.W. Bogan, P.Eng.

Peter Washchyshyn was appointed President of APEM at the recent Annual General Meeting. Peter is currently the President of DS-Lea Consultants Ltd., in Winnipeg.

Peter graduated from the University of Saskatchewan in 1968. He performed engineering services after graduation in Canada's military in Winnipeg and in Lac St. Denis, Quebec, until joining Damas and Smith Ltd., Consulting Engineers and Planners, in Winnipeg in 1971. Peter worked with Damas and Smith as a project manager and regional director until 1984, when Damas and Smith joined with N.D. Lea Associates and the firm became known as DS-Lea Associates. Since 1984, Peter has served as a senior project manager and president. He has been involved in numerous projects throughout Winnipeg, Manitoba, Saskatchewan, and Ontario, where he is also a registered engineer.

Having worked with Peter over the last seven years, I've observed Peter continually demonstrating his commitment not only as president of an engineering firm, but to the engineering profession, his family, and the community. He is involved with St. Joseph's Ukrainian Catholic Church, having served as President of the Parish council. He is also a director of the Ukrainian Cultural Centre, and he is fluent in Ukrainian.



New President Peter Washchyshyn.

Professionally, Peter is a past-president of the Association of Consulting Engineers of Mani-

Continued on page 2

Honourary Life Membership and Outstanding Service Awards

By: W.G. McKay, P.Eng. (Ret.)

It has been a recent custom to make these awards at the Annual Dinner and Dance evening. Awards Committee Chair Don Osman presented the Honourary Life Membership Award to C.R. (Charlie) Bouskill and the Outstanding Service Award to D.G. (Doug) Chapman. These two engineers have been outstanding committee members, councillors and past-presidents of the Association.

Honourary Life Membership

Honourary Life Membership is granted by the unanimous choice of Council to a member who has given meritorious service to the Association and has been a registered Professional Engineer in Canada for 35 years or more. Since the early beginnings of the Association there have been 55 members granted life membership, and of that number, 29 are currently life members.

Charlie Bouskill, a Mechanical Engineering graduate in 1952 from the University of Manitoba, and an MBA graduate in 1956 from the

Continued on page 15



THE MANITOBA Professional Engineer

December 1997

Published by the Association of Professional Engineers of the Province of Manitoba
850A Pembina Highway
Winnipeg, Manitoba R3M 2M7
Ph. (204) 474-2736 Fax (204) 474-5960
E-Mail: apem@apem.mb.ca

APEM COUNCIL

P. Washchyshyn, P.Eng., President
A.E. Ball, P.Eng.
M.G. Britton, P.Eng.
E. Eddy, Ph.D., B.P.T., M.C.P.A., M.C.S.P.
J.R. Hosang, P.Eng.
D.J. Kramble, P.Eng.
K.F. Olishefski, P.Eng.
A.J. Pollard, P.Eng.
K.J. Pratt, P.Eng.
C.S. Roberts, P.Eng.
J.M. Symonds, P.Eng., Past-President
B. Thomson, R.N.

APEM STAFF

D.A. Ennis, P. Eng., Executive Director and Registrar
S.M. Matile, P. Eng., Director of Admissions
J.C. McKinley, Administrative Officer
D. Bilodeau, Admissions Co-ordinator
E. Ryan, Accounting & Membership
L. Dupas, Receptionist/Secretary

PUBLICATION COMMITTEE

C.P. Gray P. Eng., Chair; S.C. Alford, P. Eng.; A.E. Ball, P. Eng.; M. Baril, EIT; J.W. Bogan, P. Eng.; B.A.K. Danielson, P. Eng.; B.A. Dobran, P. Eng.; V.L. Dutton, P. Eng. (Ret.); A. Kempan, P.Eng; J. Lucas, P. Eng.; W.G. McKay, P. Eng. (Ret.); B. Stimpson, P.Eng.

CORRESPONDENTS

P. Yamada, P. Eng., Thompson
R. Menon, P. Eng., Brandon

Opinions expressed are not necessarily those held by the APEM or the Council of the APEM.

Meet Your New President

(Cont'd from page 1)

toba, and has served on the Board of Directors of the Association of Consulting Engineers of Canada. Peter is serving his second term on APEM Council.

When Peter was first elected to Council, one important issue was to achieve consensus with the Manitoba Association of Architects (MAA). Thanks to his efforts, a signed Memorandum of Agreement between the MAA and the APEM was executed in May 1997.

Although Peter is committed to providing effective leadership and setting an example in both his personal and professional life, he is truly dedicated to his family. Peter has been married to Joan for 27 years and has four daughters: Katherine 24; Mary-Anne 22; Kristina 18: and Johanna (Would you care for another liqueur, Joan? Katherine, Mary-Anne and Kristina won't be home for another hour), who is ten. Perhaps those on this list would also attest to Peter's excellent negotiating skills.

As far as hobbies, Peter wanted me to say golf. For those who have golfed with him, you're aware that he is now pressing the keys and making me write this. Peter sometimes hits his ball so far into the bush, leprechauns have been seen scurrying in the fairway, mumbling incoherently to themselves. During a round, he has brought his parish priest to mutter, "Lord have mercy". Peter receives a Christmas card from Titleist each year, along with a personal hand-written thank you from its chairman (note to the Sports Committee: next year's golf tournament to be a Texas scramble or start Peter in the last foursome). The straightest part of his game is on the road to the clubhouse. His next favorite pastime involves critiquing my contract correspondence and meeting minutes.

Peter can be frequently found having lunch at the Chamber of Commerce. There, he can't help but meet (as in swing a dead cat) several people he knows.

It has been said, "It is not enough to only participate, but you must lead". In looking forward to Peter's year as APEM President, we can all expect a dedicated effort with successful results. □

Care to Share an Anecdote or Two?

A new course, Introduction to Engineering, will be taught to all first-year engineering students beginning in the fall of 1998. The idea is to give our new students some sense of where their studies will eventually lead them. Included in this offering will be an explanation of the different departmental options. Hopefully, the view will go beyond the purely academic.

To deliver this course, we will need to develop some written material for the students to use as a "text". Among the things that we hope to provide in this "text" is a series of anecdotes relating to the experience of being an Engineer, particularly a new Engineer. We are looking for situations in which things were not as they should have been, and an explanation of how you were able to "engineer" your way around the problem. Each of you has had that experience, and you probably have stories to tell. We are appealing to you to send us those stories in a form that we can edit to hide your identity, but give the students an idea of what may lie ahead.

If you are willing to help, please send your contribution to Ron Britton, P.Eng., Department of Biosystems Engineering, University of Manitoba, Winnipeg, MB R3T 5V6. My electronic link is ron_britton@umanitoba.ca. □

WE HAVE LOST CONTACT. MAY WE HAVE AN ADDRESS?



A.J. Kondel
R.B. Le Bleu
G.S. Ram
G.K. Turnbull

REINSTATEMENTS SEPTEMBER & OCTOBER 1997

G. Trachilis

NEW MEMBERS REGISTERED SEPTEMBER & OCTOBER 1997

B. Coté (PQ)
D.N. Delen (ON)
D.D. Freeborn (AB)
K.M. Galloway (BC)
D.H. Goritz
M. Hildebrand
R.W. Imai (AB)
R.W. Johnson
L.G. Keeping (ON)
M.A. LeBlanc (NB)
J.D. Leisle
R.F. Mazza (ON)
M.R. Mathes
J.G. Miller (BC)
G.A. Misfeldt (SK)
J.P. Nosé
O.B. Nayak
Y. Qin
D.M. Roberge
J.L. Rocke
R.J. Slade (BC)
M.E. Swim
D.G. Szwarc
G.W. Taylor (SK)
T.K. Tikka (ON)
A. von Eppinghoven (ON)
X.L. Yao

LICENCES ISSUED SEPTEMBER & OCTOBER 1997

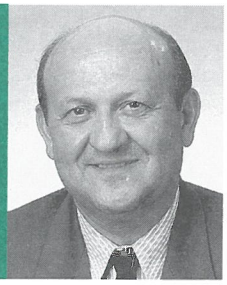
R.A.P. Armstrong (ON)
T. Chao (PA)
T.C. Greenlaw (MA)
L.O. LaBere (ND)
R.R.J. Lunt (MA)
R.L. San Giacomo (NY)
N. Tchebotarev (PQ)
A.P. Teasell (B.C.)

EITs ENROLLED SEPTEMBER & OCTOBER 1997

S.K. Basu
C.W. Carroll
T.B. Chau
T.J.W. Dueck
T.W. Ewanochko
N.W. Fossheim
A.J. Friesen
M.B. Gordon
K.M. Huminuk
S.M. Joseph
K.W. Klotzbach
B.C. Lamontagne
M.D.P. Loewen
A.P. Mathew
N.C. Mattson
D.M. Myers
T.P. Pohjoisrinne
I. Robinson
R.D. Stark
M.T. Vuong
P.L. Woo

President's Message

P. Washchyshyn, P.Eng.



On Public Awareness and Image-Building

Firstly, I wish to commend my predecessor, Mal Symonds, on his initiative, enthusiastic approach to issues, and direction provided to Council over the past year. I look forward to his continued support as Past-President in the year to come.

We are constantly told that we are in times of change, and we must approach the next millennium with a different approach than in the past. Are times any different or is it that our awareness is sharpened?

We are entering times of significant change for the Association of Professional Engineers of Manitoba. However as one President's and Council's term ends, the new President and Council have the joy of continuing to deal with many similar issues. As one colleague, a past-president stated at the recent Annual General Meeting, *"you will soon realize that your purpose in your term of office will be to complete some of the initiatives started by your predecessors and set the agenda for your successor"*. I personally pledge to continue the good work of my immediate predecessors, Mal Symonds and Cathy Stewart.

We are nonetheless in changing times. I would like to highlight three principal areas that Council and the Association will need to deal with in the next year:

- the learning process associated with a new governance model;
- our mandatory professional development program, which has piqued the interest of many members;
- the introduction of our new act in the Legislature with the main stumbling block being the MAA and their opposition to our definition of professional engineering.

These are matters of significance and probably generally understood by those who actively participate in the APEM activities – like those in attendance at the AGM, the 20% of membership who voted for Council, and those who spend endless hours in committee work. However, for us to achieve success in these areas, the APEM needs to be more relevant to all of our members and the public. We need to continue improving our communications. Public awareness is a necessary first step to enforcement of the Act and protection of the public interest to fulfill the mandate of the APEM.

At the AGM, a lively debate ensued on mandatory professional development. The following comment was made: *"If you wish to continue to collect my $200 annually, don't hassle me and my colleagues with silly forms and technical courses"*. Fortunately, this view was not shared by the vast majority in attendance. However, that this view exists at all indicates the lack of understanding of the relevance of the APEM to its membership and to the public it serves. Again, public awareness will be a key element of Council proceedings in the near future.

A positive example of public awareness occurred during the flood of 1997. Most comments made in the media with respect to engineers were very positive. Our media stars such as Larry Whitney and Doug McNeil provided an air of confidence that, although there is a looming disaster on our doorstep, don't panic, the engineers are in control. I believe we need more of that positive image-building and public awareness to enhance our ability to fulfill a mandate and position the engineer in his or her other rightful place in society. However, we need to create that image in the context of day-to-day life, not merely fighting a disaster.

This direction and emphasis will follow in future articles of the MPE. I look positively toward the future and look forward to serving you in the year ahead. □

"On the eighth day, GOD created PNEUMATIC CONTROLS"

By: W.T. Jackson, EIT

An unusual headline for a Professional Development breakfast meeting, but certainly a quote that caught the attention of the 40 people in attendance at the Norwood Hotel on September 16. It was a statement put forth by Michael Ferley, P.Eng., a Mechanical Engineer in the University of Manitoba's Physical Plant department.

Mr. Ferley presented his "history" lesson to assist him in his explanation of how the University finds more effective and economical ways of operating the buildings on campus. Pneumatic controls, he explained, work fine for modulating equipment valves to maintain setpoints in the system – but there are drawbacks. Controllers can be bypassed, and there are no monitoring capabilities. Mr. Ferley pointed out that such a setup is labour-intensive for monitoring the performance of the equipment, and the system is reactive – not proactive. In other words, someone must call in a complaint. Time clocks were introduced 21 years ago, and while their function consisted of starting and stopping building fans on a weekly schedule, schedules changed, and time changed in the spring and fall, so there was a need for improvement. Pneumatic controls were ideal for one building with a time clock, but for all the buildings on the campus, and the remote location on Bannatyne Avenue, it was left for engineers to come up with a better system.

The answer was found in CCMS – Computer Control and Monitoring System. CCMS not only modulates equipment to maintain system setpoints, but it provides operator access to remote systems, communicates system information via networks, monitors performance, and issues alarms and safety shutdowns of equipment. While there are many advantages to CCMS, Mr. Ferley revealed that with the additional capabilities comes increased system complexity, and, ultimately, more opportunities for blunders. When a 17-million-dollar Faculty of Management building was in progress, a problem with a steam flowmeter took three years to resolve because no-one was held accountable for his or her part in the project. The Answer? A cluster. It's a term used for a system of network computers that can be managed centrally, or a team of specialists assigned to a specific project. Physical Plant created its own in-house CCMS group, and assigned the group the responsibility for all aspects of all control systems. The CCMS group gets involved during project design, remains involved through installation, programming, and commissioning, and performs ongoing control maintenance. The cluster brings a focused approach, improved continuity, and quality assurance to renovations and new construction projects. During the five years since the CCMS group has been in operation, Mr. Ferley estimates that the University has saved more than two million dollars on the operation of its physical plant. □



P.D. Committee Chair Bob Bruce (r) thanks speaker Mike Ferley.

Professional Development

Mandatory Professional Development

By: S.M. Matile, P. Eng.

Why do we need an MPDP?

The engineering profession in Canada has existed without a mandatory professional development program for the last 75 years. Why do we need to implement a program now?

Engineering is a profession in which the practitioners must engage in lifelong learning. The Professional Engineers' Code of Ethics, to which all members of APEM are required to subscribe, requires that all engineers "strive to maintain a high level of competence by seeking opportunities to acquire knowledge of, and experience with, new techniques and developments". Professional development is, therefore, – and has long been – a requirement of the professional engineer.

Is it realistic to rely on the Code of Ethics? Is the Association really fulfilling its mandate of protecting the public by issuing a Code of Ethics and counting on its members to comply with it? Should the Association not take a more active role in reminding its members of their responsibilities and assisting them in maintaining their competence?

The Manitoba Law Reform Commission recently completed a study for the provincial government on the regulation of professions. It recommended that all self-regulating bodies be required to implement continuing competence programs for their members. In Manitoba, the engineering profession is lagging behind other professions in embarking on such a program. The accountants, dentists, optometrists, nurses, social workers, pharmacists and physiotherapists – to name a few – all have programs in place. Given the rapid rate of change of technology and its impact on the engineering profession, perhaps we should have been among the first, not the last, to become proactive in this area!

The Canadian Council of Professional Engineers (CCPE) has recommended to all engineering associations in Canada that they develop mandatory continuing competence programs, and has prepared a framework for a model program. The Alberta Association (APEGGA) has taken the lead, and has already implemented a program. APEM's MPDP is modelled very closely on the Alberta model, as are the programs being developed for the Newfoundland, Prince Edward Island, Nova Scotia and New Brunswick associations. Ontario, Saskatchewan and British Columbia have all indicated that they, too, are in the process of developing programs based on the Alberta model. By implementing a program consistent with the programs of the other engineering associations across the country, APEM will be helping to ensure the inter-provincial mobility of its members.

In the US, too, the momentum is building. The US National Council of Examiners for Engineering and Surveying (NCEES) recently developed a model for compulsory continuing education, which has been adopted by several states, and is proposed for adoption by many more. Continuing education is, therefore, already an international mobility issue.

So, why do we need the MPDP? It will help us demonstrate to the public that we are maintaining a high standard of competence. It will increase the credibility of the profession within the province. And it will help with mobility, both nationally and internationally.

What is the proposed MPDP?

In a nutshell, the Mandatory Professional Development Program (MPDP), as currently proposed, is as follows:

Every member of APEM must:

- define, annually, his or her individual Scope of Practice (industry of employment, area of specialization, job duties, level of responsibility, impact of work on the public, the environment, the employer, etc.)
- articulate, annually, the skills and knowledge required for carrying out his or her responsibilities and develop a plan for maintaining, improving or obtaining those skills and that knowledge (learning new concepts, obtaining practical experience, developing new skills, participating in professional service activities, etc.)
- keep an annual record of the plan and of the activities undertaken (e.g. formal and informal education, training programs, work experience, self-study, etc.) to fulfill the plan
- provide a summary of PD activities undertaken in each of six activity categories with his or her annual membership renewal, commencing January 1, 1999.
- engage in at least 240 Professional Development Hours (PDHs) over any three-year period.

Members will be required to be active in at least three of the following six categories:

- Professional Practice (15 hours' work = 1 PDH, to a maximum of 40 PDH per year)
- Formal education (1 hour of class = 1 PDH, 1 CEU = 10 PDH, to a maximum of 30 PDH per year)
- Informal education (1 hour of activity = 1 PDH, to a maximum of 30 PDH per year)
- Professional service (1 hour of activity = 1 PDH, to a maximum of 30 PDH per year)
- Presentations outside normal job functions (1 hour of preparation and delivery = 1 PDH, to a maximum of 20 PDH per year)
- Contributions to knowledge (1 hour of committee work = 1 PDH; 1 patent registered = 15 PDH; 1 published, peer-reviewed article = 15 PDH; 1 published, non-reviewed article = 10 PDH (yearly maximum); 1 hour reviewing an article for publication = 1 PDH (10 PDH yearly maximum); 1 hour editing article for publication = 1 PDH; all to a yearly maximum of 30 PDH).

There is a provision for the carry-over of credits in excess of the maximum for up to two years.

Audits will be randomly performed to ensure that a plan is in place, that it is satisfactory, and that the member is engaging in sufficient and appropriate PD activity.

Where can I get a copy of the MPDP?

The complete MPDP can be obtained from the APEM office. It is also available on the internet at http://www.mts.net/~bobbruce/mpdp/mpdp.html.

What is the pilot project all about?

The pilot project is being launched to test the MPDP, and to address such questions as: Is it a reasonable program? What are the problem areas? How can it be improved? Can its requirements be readily achieved by all of our members? Are the instructions sufficiently clear?

Approximately one hundred professional engineers, representing a wide range of engineering situations throughout Manitoba, have volunteered to "test" the MPDP. Ten groups of approximately ten engineers – five in, and five outside, Winnipeg – have been formed. The groups have been organized to achieve as diverse a cross-section of the engineering profession as possible. These volunteers will test the MPDP over the next few months by defining their scopes of practice, determining the skills required in their areas of practice, developing plans to maintain or improve those skills, and recording the professional development activities engaged in over the past twelve months to see whether they meet the requirements of the MPDP. Problems encountered and issues arising during the process will form the basis for the revision and refinement of the MPDP for presentation to the membership next year for approval.

It is probably not too late to volunteer. If you would like to be included in the pilot project, please call:

Bob Bruce, Chair
Professional Development Committee
945-6636. □

Are You Interested in being a Second Reader? *(External Advisor)*

The Department of Electrical and Computer Engineering at the University of Manitoba has scheduled the 4th Year Thesis Day for Friday, March 20, 1998. In preparation for this day, we are inviting practising engineers in the community to come and join us in the judging of undergraduate presentations.

If you are interest in taking part, please call Judy Noble at 474-9603 or e-mail jnoble@ee.umanitoba.ca □

APEC Energy Week: Opportunities in the Energy Industry for Manitobans

By: S. Rangarajan, P.Eng.

What is APEC?

The Asia Pacific Economic Cooperation (started in 1989) is a forum to discuss the growing economic independence among Asia-Pacific countries. Its current membership includes Australia, Brunei, Darussalam, Canada, Chile, People's Republic of China, Hong Kong, Indonesia, Japan, Republic of Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Republic of the Philippines, Singapore, Chinese Taipei, Thailand, and the US. The Asia-Pacific region has the fastest growing economy in the world. APEC's 18 members have a combined GDP of over 13 trillion US in 1995, approximately 55% of total world income and 46% of global trade. The governments from these countries have one common goal: "to enhance and promote the role of the private sector and the free-market principles in maximizing the benefits of regional cooperation". They also made a commitment in 1993 to meet annually and hold informal discussions to strengthen and reaffirm the agreed-upon objectives, and to realize the goals of open trade and investment in the region. Canada is one of the founding members of APEC, and its participation in APEC is part of the Government's commitment to strengthen its presence in the Asia-Pacific region.

To raise awareness, the Canadian government declared 1997 to be Canada's Year of Asia Pacific (CYAP). In designating 1997 as CYAP, Prime Minister Chretien identified youth as a special target group for involvement in APEC activities. The government wants to make young Canadians aware of the tremendous opportunities that exist in the Asia-Pacific region. Young Canadians are invited to participate in five APEC Ministerial Meetings. One of the five ministerial meetings was the APEC Energy Ministers Meetings held in Edmonton on August 25-26, 1997.

Energy Week and Youth Participation

APEC Energy Ministers meeting (led by the Minister of Natural Resources, Hon. Ralph Goodale) discussed APEC's expanding energy needs while accounting for environmental and social considerations. Topics included: progress in implementing energy-policy principles, power-infrastructure investment, the development of environmentally sound infrastructure, the common recognition of efficiency testing facilities, and the common acceptance of their results.

The objective of youth participation was to voice their concerns about energy uses within the Asia-Pacific region. Eight young people from across Canada were assembled by the Youth Coordination Bureau to form the APEC Energy Week Canadian-Youth Core Team. I learned of Energy Week through the Hydrogram (the weekly newsletter of Manitoba Hydro). I would like to thank both Manitoba Hydro for referring me to the APEC Youth Coordination Bureau, and the scholarship received from the Asia-Pacific Resource Centre at Grant MacEwan Community College (Edmonton). The youth team had a blend of undergraduate and graduate students, recent graduates, one technologist and one professional engineer (myself).



Youth Core Team Members and Co-ordinators with Hon. Ralph Goodale (third from left), Federal Minister for Natural Resources.

Events during the Energy Week

The week started with an orientation and a youth symposium followed by the two-day International Energy Symposium organized by the Canadian Energy Research Institute. The youth corps team submitted a report to Minister of Natural Resources Hon. Ralph Goodale on the important issues for youth and made recommendations to address those issues.



Manitoba Diplomats at the APEC Welcome Reception.

Youth Symposium

The topic of the youth symposium was human resources initiatives. Dr. William Mobley from Hong Kong gave an excellent overview of growth in the Asia region. Per capita incomes have been rising and China, Japan, India, and Indonesia are predicted to be major economies by 2010. Water, sanitation, and power will be the major growth areas in East Asia. In addition, other skills, such as understanding cross-cultures, and the ability to adapt to changing markets, are identified as important in succeeding in the international market. Another important factor in successful international business ventures is to build long-term working relationships.

International Energy Symposium

The symposium was attended by over 600 participants which included senior policy-makers from governments and industries from all the 18 member economies.

The plenary session consisted of reports from several working groups of APEC, presented by the chairs of the respective groups. Four concurrent roundtable discussions focused on the following topics: 1) Solutions for overcoming financial and other impediments to project and infrastructure development; 2) Energy-supply growth requirements and sustainability; 3) Fostering a favourable energy-business climate; and 4) Opportunities for partnering.

The final session was the minister-industry dialogue in which the issues covered in the roundtable discussions were presented by selected industry representatives, ministers and youth members. I had the pleasure of presenting the youth perspectives on the first two topics (solutions for overcoming financial and other impediments, and the energy-supply growth requirements and sustainability). Ms. Tara Isabelle, from the University of Regina, presented the team's views on the other two topics (fostering a favourable energy-business climate and opportunities for partnering). The Youth team's perspectives were well received and initiated discussions from the energy ministers of Australia, Chile, Malaysia, Papua New Guinea, and the US.

Youth Core Team Report

It was an exciting and challenging task to compile the issues that were relevant to youth. The goals identified were to encourage environmental sustainability and to promote opportunities for youth in the Asia-Pacific region.

Continued on page 15

Walter Saltzberg Retires

By: J.W. Bogan, P.Eng.

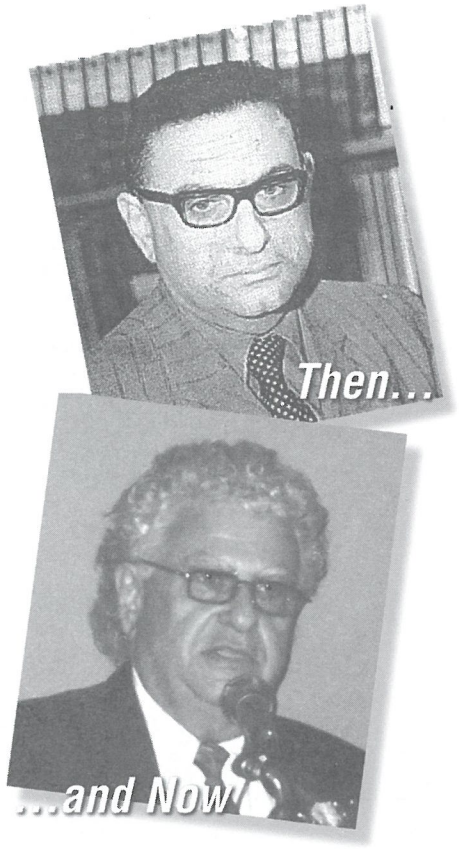
On September 25, 1997, over 400 guests joined Walter Saltzberg at a retirement dinner in his honour at the International Inn. Walter was employed by the Province of Manitoba's Highways and Transportation Department for over 40 years. Most recently, Walter served as Director of Bridges and Structures. The guests included Walter's family, friends, colleagues, and associates whom Walter had come to know throughout his career. Many provided their favorite anecdotes through dinner. Besides a Walter Saltzberg impersonator, stories of an inseparable chicken, an obsession with electronic gadgets and antennas, too few red pencils for Walter's review of consultants' drawings, his expertise with dynamite, an inattentive passenger, as well as a tyrannical (and caring) co-worker were recited. Testimonials from Walter's closest friends and family members served to ensure that everyone was aware of his close personal relationships and valued friendships.

Having previously worked with Bridges and Structures, I knew that Walter grew up during the Second World War. However, like many present that evening, I had no idea of Walter's life experiences until the information was shared by a co-survivor. Walter joined me over lunch on another day to provide the details of his childhood.

Walter was born to Jewish parents in Warsaw, Poland, in 1931. His parents enrolled him in a French-immersion school, so that he could eventually study in France. Walter was eight years old, in his second school year, when Germany invaded Poland in 1939. Walter's parents were able to send Walter to a family friend's apartment. The friend was a gentile Polish doctor who served in the Polish underground. Walter hid in the apartment for two years and never ventured outside. At the time, Walter's parents and brother worked for a German company that produced typewriters and adding machines. The last time Walter saw his parents and brother, he was eleven years old.

In the apartment, Walter usually remained in the washroom when there were visitors. One day, one of the scariest moments occurred when the Gestapo visited the apartment and conducted a two-hour search. They examined each room, trying to locate secret panels where someone might be hiding. Detection meant certain death. Walter hid on the floor, behind the tub, to avoid detection, and covered himself with a towel. Fortunately, he was not discovered.

During the Polish underground uprising in the fall of 1944, Walter was forced to seek shelter outside the apartment. He found refuge in another abandoned building. Towards the end of the uprising, the building was bombed. Walter was buried up to his head and his right leg was broken above the knee. Walter escaped, but was not able to receive medical attention. Another boy, now living in Toronto and who Walter visits every year, took him into hiding in the sub-basement of another building, with four others. According to Walter, they survived in a 40-square-foot space for five months. Only one member of the group was able-bodied enough to gather food. Warsaw



was emptied by the Gestapo, who continually searched for those in hiding. The group had little food and water, and survived for three months on a partly rotten bag of onions that was found in the ruins of another building.

Throughout this time, Walter hid in the building's sub-basement with a broken leg, which continued to bleed. He was not able to receive medical attention until May 1945, nine months after being injured, when the Russian army occupied Warsaw.

Following the Russian occupation, Walter was sent to a Jewish orphanage outside Warsaw. He underwent surgery on his leg at a Russian military hospital. The operation was not successful and Walter almost lost his leg because of infection. He was examined by the Swedish Red Cross and sent to Sweden for further treatment. There, doctors attempted to reconstruct his leg. Initially his right leg was fourteen inches shorter than the left. After surgery, it was only three inches shorter.

Walter was brought to Winnipeg by distant relatives. He brought with him a book titled *Three Hundred English Words*. For Walter, it provided enough vocabulary to get started. Walter enrolled in the second half of Grade Nine at Machray School in January 1948, some nine years after leaving his family and being forced into hiding.

Walter graduated from St. John's School and pursued an engineering education. It was occasionally interrupted in order for him to earn enough money to continue. He spent one year as a cook's assistant when he worked for CN, during construction of the Sherridon-to-Lynn Lake line in northern Manitoba. Walter eventually progressed to the position of instrument-man, prior to returning to university. During subsequent summers, Walter worked with the provincial Bridge Office. He graduated in 1957 from the University of Manitoba with a degree in Civil Engineering and joined the Bridge Office on a permanent basis on May 5, 1957 as a project engineer.

Walter was promoted to Senior Bridge Construction Engineer and, after George Depauw retired, he was appointed Director. Later in his career Walter was also the Director of the Planning, Design, and Survey Branch.

At the dinner, several testified to Walter's humanitarian efforts throughout his life. He has served as President of the Optimist Club of Assiniboia, President of the Manitoba Schizophrenia Society, and Vice-President of the Schizophrenia Society of Canada. Walter previously received the Optimist of the Year Award.

Walter also provided dedicated service to the engineering profession. He served on APEM Council from 1975 until 1981, as President in 1980, and Registrar in 1981. Walter has participated on numerous committees, including the Consulting Engineers, Annual General Meeting, Nominating, Executive Finance, and Practice and Ethics Committees, and the Admissions Review Board.

Walter was awarded APEM's Merit Award in 1984, and the Outstanding Service Award in 1988. The citation states that Walter displayed ingenuity, skill, and dedication beyond the call of duty in the performance of emergency and special works ranging from the protection of river structures against ice damage to the repair of damaged and dangerous structures, including the Trans-Canada Highway Bridge over Symington Rail Yards, after the structure was damaged by a train collision. Further, Walter was awarded the Meritorious Service Award for Professional and Community Service by the Canadian Council of Professional Engineers in 1989. Few engineers in Canada have achieved such distinction.

Walter has played a key role throughout his career in the development of technologies to further bridge engineering in the province. The Taylor Bridge, which recently opened in Headingley, serves as a testament. Besides being a member of the American Association of State Highway and Transportation Officers (AASHTO), he currently serves as Secretary Treasurer of Intelligent Sensing of Innovative Structures (ISIS Canada), a position which he has held since 1995.

After Steven Spielberg completed the movie *Schindler's List*, a foundation was established to record and preserve Holocaust stories. Walter has recorded his life events, which are truly remarkable, for the foundation.

All attending the dinner would agree that few could match Walter's achievements. Each was honoured to know Walter not only as an engineer, but also as a humanitarian who has endured more than most could imagine. □

1997 Annual General Meeting

1997 Wine and Cheese Reception

By: J.W. Bogan, P.Eng.

The Annual Wine and Cheese Reception was held on October 17, 1997 to recognize the contributions made by committee members, award recipients, and past-presidents, and to honour our newly registered members and recipients of the 1997 APEM Scholarships. The reception was held at the Niakwa Country Club.

Due to a sudden and severe bout of tonsillitis of President Peter Washchyshyn's youngest daughter, he was not able to attend. However, in his absence, Past-President Mal Symonds ably stepped in to present certificates to new members and scholarships to those selected.

Under the capable direction of Don "Animal House" Osman ("I can't believe these marks – have they applied a factor of two to grade point averages?"), each recipient was recognized for his or her achievements. Scholarships were presented to:

- Kapil Sahariya – First Year Engineering in Electrical
- C. Tyler Dick – Second Year Engineering in Civil
- Curtis Reimer – Fourth Year Engineering
- Brea Williams – Fourth Year Engineering in Civil
- Kyung-Mi Krystal Park – Fourth Year Engineering in Electrical
- Jasvinder Sandhu – Fourth Year Engineering in Mechanical
- Trenton Dean Shuttleworth – Fourth Year Engineering in Civil



New APEM Members.

The Canadian Northlands Development Award was presented to Steven Robertson. The award was established by Major J.L. Charles, in memory of his son, who died serving in the Second World War. It is presented annually to a third-year student who has displayed qualities of initiative and potential leadership, and has worked one summer in Canada's Northland. Steven is in his third year of the Industrial Engineering Co-op Program at the University of Manitoba. He is a certified Ontario Ministry of Natural Resources Forest Firefighter, spent two summers planting trees, and worked as a part-time crew boss at Rugby Lake Cedar Works and Next Generation Reforestation. □



1997 Annual General Meeting

What Happened at the 1997 APEM Annual General Meeting

By: V.L. Dutton, P.Eng. (Ret.) and R.J. Bruce, P.Eng.

It was a good meeting handled competently, as meetings run by engineers should be. As the sand piles up in the bottom of the glass for this reporter, he appreciated the Moment of Silence for Deceased Members. In Scouting, we call it Gone Home.

If you haven't yet read our President's Message in the October issue of MPE, you might pull it off the shelf now. President Symond's discussion of the two Memoranda, in his article, was presented in the meeting in somewhat more detail.

Councillor Spangelo started the Accountability Session that took much of the remaining time of the meeting. His presentation was devoted to summarizing the work Council has been doing on The Engineering and Geoscience Professions Act. His presentation generated a number of questions and observations.

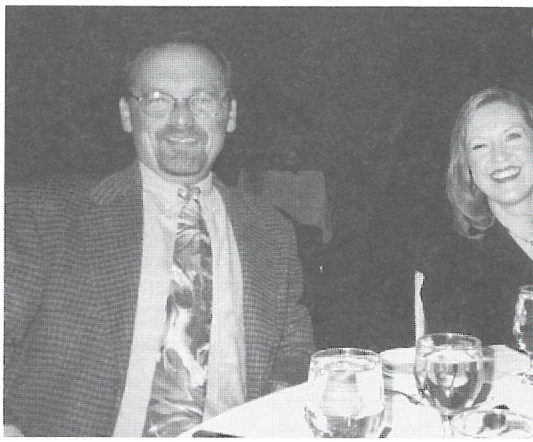
Councillor Britton followed with a comprehensive presentation of a progress report on the Continuing Competency initiative. The Proposal to introduce a Mandatory Professional Development Program (MPDP) is a component of this and generated most member interest. The two microphones became veritable magnets as members queued to have their say or to ask for further information on the MPDP. Strong opinions were expressed both in favour and in opposition to this proposal. Following the lengthy and lively discussion of this topic several members volunteered to participate in the pilot project to test the MPDP.

A brief report was then given by Dave Ennis summarizing the negotiations with other professional associations on defining the scope of practice of the engineering profession with respect to those other professions. During the past year negotiations and discussions have been held with the Manitoba Association of Architects, the Certified Technologists and Technicians Association of Manitoba, the Association of Manitoba Land Surveyors, the Association of Landscape Architects, and the Canadian Association of Physicists (representing the Natural Science Societies of Canada). Some of these discussions produced agreements, and discussions are continuing with the others.

I did not know that 50 members are required to form a quorum at an AGM. As a result, I was surprised to be greeted at the Registration Desk as Quorum Man. Now the meeting could proceed! It follows that nearly three kilomembers were elsewhere during that Saturday morning, so it was satisfying to see so many young members, of both genders, in the audience and taking their turns at the microphones. Were they all satisfied with the answers and explanations that they received? It would appear that our Association has been in good hands and will continue to be so if the concerns of these young members are a token.

On the way out, I had a nice surprise. A young lady was clearing the tables of the cups and saucers that sat on various tables as a result of our break at half time. Aging backs always needing exercise, I helped her by collecting some of the chinaware from under various chairs. As a result, we had a short conversation. Because her excellent English was obviously not her native tongue, I asked her if she spoke French. "No," was her reply, "I'm from Bosnia." Suddenly, the news that we have been hearing from that vexed part of the world has a face for this retired P.Eng. □

Ed Note: The minutes of the Annual General Meeting are now available from the APEM office.

















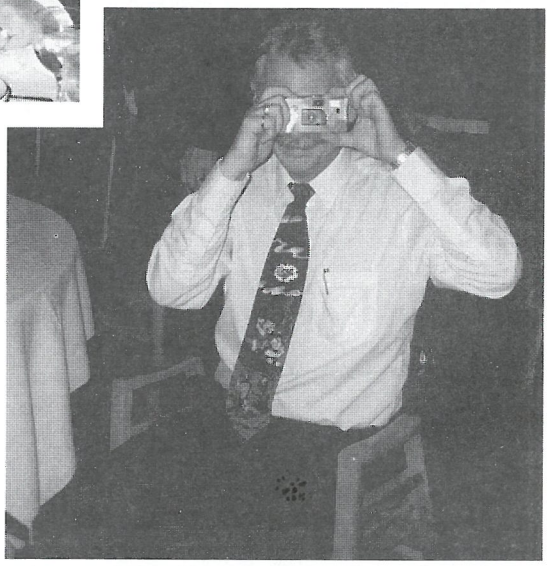




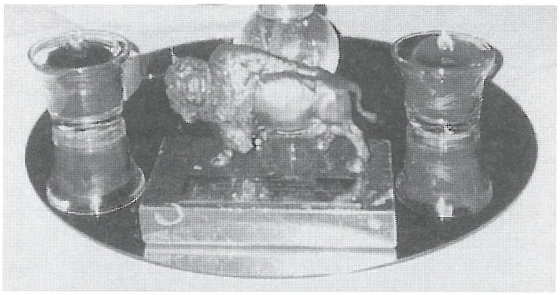


















1997 Annual General Meeting

AGM Professional Development Sessions Commence

By: T. Pietrafesa, EIT

The morning professional development session of the annual general meeting consisted of two presentations, the first titled "Technology and Managing the Flood of '97", and the second, "Challenges of Change".

The presentation on the Flood of 1997 was made by Larry Whitney, P.Eng., and Rick Bowering, P.Eng., of Manitoba Water Resources, who provided an overview of the use of technology in fighting the Red River Flood. The initial flood forecast concluded that the likelihood of a large flood was small, based on soil moisture, frost depth, and higher-than-normal snowfall in the Red River drainage basin. After the "blizzard of the century", it was determined that a major flood would occur in the spring of 1997. The expected flood level required that all ring-dikes be raised. This was not considered a problem due to the time available and the fact that borrow pits were easily accessible. The audience was also told that the Portage Diversion was used extensively to reduce the amount of water entering the city. The maximum peak flow through the Floodway was 65,000 cfs. This rate could have been increased, but a railway bridge crossing the Floodway might have been damaged.

Another source of concern was the potential for floodwaters to enter the La Salle River. This conclusion was made with the help of satellite imagery provided by RadarSat. As a result, the "Z" dike was constructed. Concern emerged that a quickly constructed dike might break at one or several locations along its 24-km length. As a result, several possibilities were evaluated, and plans were drawn up to meet these "scenarios".

The one remaining concern is that, while the 1997 flood was one of the largest in modern times, it was not the largest on record. If a flood of the magnitude of the 1826 flood occurred, it would overwhelm all existing flood-control measures.

The second presentation, on the Challenge of Change, was made by Dick Dawson of the Manitoba Council on Post-Secondary Education.

Mr. Dawson began his presentation by stating that, 20 years ago, 80% of jobs required only high-school education, while today, over 80% of the jobs require post-secondary education.

He went on to state that Canada has the lowest percentage of people graduating from post-secondary educational institutions compared to other G7 countries. As a result, he predicted, the gap between the rich and poor will continue to grow, with those who are highly educated earning far more than those with less education.

His view was that more people should be enrolled in post-secondary education for longer periods of time. Also, he indicated that there should be more co-op programs. □

AGM Professional Development Sessions Continue

By: B. Stimpson, P.Eng.

Following a tasty lunch at the Niakwa Country Club, and the opportunity to meet and talk with engineering colleagues, it was back to business with the second half of the Professional Development Day. The first topic of the afternoon was a presentation on the current status of the proposal for a Mandatory Professional Development Program (MPDP). President Mal Symonds introduced this initiative as one of the largest and most important in APEM's history, which will, subject to membership ratification, become a key component in a continuing competency program currently under development by a Sub-Committee of Council, chaired by Past-President Cathy Stewart. This committee was established in response to a motion passed at the 1996 AGM when a proposal for an MPDP was first presented. Cathy Stewart emphasized that Council had listened carefully to the concerns expressed at that meeting and was undertaking to do its best to communicate with members the processes and plans for developing a Continuing Competency Program, of which the first step is the MPDP. It was emphasized by both Cathy Stewart and Mal Symonds that a competency program should build from the Code of Ethics, which mandates practice only within one's area of competence. Because it is clearly impossible for the Association to completely assure the continuing competence of each and every member, adherence to the Code of Ethics will continue to be paramount.

Bob Bruce, chair of the MPDP Sub-Committee and the Professional Development Committee, presented, in summary fashion, the purpose and driving force behind the MPDP proposal. Copies of the full proposal are available from the APEM office, or at http://www.mts.net/~bobbruce/mpdp/ mpdp.html. APEM is not breaking new ground with the MPDP. APEGGA has already implemented a program. APEM's proposal is quite similar to APEGGA's and therefore will, if approved, facilitate inter-provincial mobility. The meeting also learned that the Atlantic Provinces have collectively proposed the adoption of a similar model. In addition, data on mandated professional development programs for professionals such as accountants, pharmacists, social workers, and dentists confirmed that the proposed MPDP is broadly similar in its annual requirements to these already established programs.

Wally Jackson, MPDP Sub-Committee member, led the meeting through the proposed annual reporting procedures and the categories for accumulating the 240 Professional Development Hours (PDHs) required every three years. It was noted that a member who is practising professional engineering for at least 600 hours per annum has already earned one-half of the required annual average of 80 PDHs.

Bob Bruce returned to the podium to describe the time-line and process for the Pilot Project, which commences immediately after the October 1997 AGM and will be completed by the end of February 1998. The plan is to present a proposal for an MPDP and its implementation, and any needed changes to By-Laws, at the October 1998 AGM. A mail ballot will follow.

Questions from the floor included the issue of enforcement. Cathy Stewart outlined a possible process which is currently only in draft form. The focus will be on being proactive, with assistance for members, when needed, to develop their professional development plans. If members do not submit their professional activities report forms with their annual fees, the first step will be to send a reminder, followed, in the event of no response, by the provision of assistance, at the member's expense, to develop the plan and report. If this does not bring the matter to a successful conclusion, then APEM will conduct a Practice Review of the member. It was noted that a member, in lieu of undertaking the MPDP, can elect a Practice Review at his or her own expense. Such a review would be required annually, as long as the MPDP was by-passed. Under the MPDP, there is provision for special consideration for failing to meet the 240 PDHs over a three-year span for such circumstances as family leave, illness, or unemployment.

In answer to other questions, the meeting was informed that last year's budget included provision for an extra staff member to handle the additional work load that the MPDP will create. It will also be necessary to stagger dues' invoices to distribute the work-load more uniformly than the current fee-payment schedule would permit.

Following the mid-afternoon coffee break, Jake Kosior, P.Eng., Research Associate at the U of M's Transport Institute and transport consultant, gave an entertaining and informative presen-

Continued on page 11

Mandatory Professional Development Program Explained

By: T. Pietrafesa, EIT

On October 17, 1997 at the Annual General Meeting, a presentation was made by Bob Bruce and Cathy Stewart regarding the progress of the Mandatory Professional Development Program (MPDP).

The audience was told in a brief statement by Cathy Stewart that the MPDP would form the basis for the Continuing Competence Program (CCP). The CCP goal is simply to ensure that members of the APEM maintain their ability to effectively perform a service in a skilled knowledgeable, and ethical manner consistent with their positions and responsibilities.

The CCP is built from the Code of Ethics, and all members of the Association are expected to comply with the program. When members pay their annual dues, they will be required to state what professional activities they have done over the past year to maintain their competence. It is therefore a good idea to start keeping records of professional activities one does over the past year, since there will be enforcement, which will include random inspections. If a member is unable to report to the APEM of their activities over the past year, an audit can be requested by a member to be conducted at the member's expense.

The APEM has followed other Associations in Canada and the United States in establishing Professional Development as an element of Continuing Competence. The current MPDP program was developed from the system used in Alberta. Cathy Stewart also indicated that it would take until 1999 or longer to have the CCP fully operational.

The MPDP requires an individual to accumulate unites of measure known as Professional Development Hours (PDH), and to obtain 240 PDHs over the three-year introduction period (80 PDHs per year). The individual is required by the MPDP to:

- Describe individual scope of practice to determine what skills are required in that area and level of responsibility;
- Develop a plan to meet the stated goals

Members are to report Professional Development Activities and acquire at least 80 Professional Development Hours (PDHs). Forty PDHs can be obtained from work activities. Other PDHs are obtained through various activities.

The PDHs can be carried forward two years. The APEM is also looking into increasing the number of courses offered as professional development, but the APEM will not certify a particular activity for PDHs. Members in management can maintain status, as long as they are practising in accordance with the Code of Ethics.

Currently there are ten pilot programs being conducted around the province. All groups will provide feedback, which will be used to refine the program. Council and the MPDP subcommittee will then make a presentation to the entire membership for the adoption of the MPDP in 1998. □

NOTICE

Payment of 1998 Fees

Annual Dues invoices have been mailed to all members and Engineers-In-Training. If you have not received yours, please contact the APEM office. Please be reminded that, according to the By-Laws, THE ANNUAL MEMBERSHIP FEES ARE DUE AND PAYABLE BEFORE JANUARY 1, 1998.

For those members no longer practising in Manitoba, and wishing to resign in good standing, letters of **RESIGNATION** of membership **MUST BE RECEIVED IN THE ASSOCIATION OFFICE ON OR BEFORE DECEMBER 31, 1997.**

Applications to RENEW NON-RESIDENT membership, or to TRANSFER TO or RENEW RETIRED membership, must be received in the Association office ON OR BEFORE DECEMBER 31, 1997.

Those who are unemployed may qualify for deferral of dues. The notice accompanying the invoice provides details of eligibility.

AGM Professional Development Sessions Continue

(Cont'd from page 10)

tation on "Logistics and the Professional Engineer." He led the audience through the evolution of transportation and distribution logistics from its military origins (the military language is still used in such terms as "marketing tactics" and "product logistics"), to its current position as the most important strategic competitive weapon in the global commercial environment. In the 1990's, the traditional strengths of engineering – technical know-how – are just as available in one country as another. Success in business now requires other strengths in addition to the technical ones, including: knowledge of logistics; team-oriented skills; and creative, artistic, and communication capabilities. The emphasis in the 1990's is on customer satisfaction and what Jake Kosior called "womb-to-tomb" management, in which a business must ensure availability of the right product, at the right place, at the right time, in the right quantity, in the right condition, for the right consumer, and at the right cost – i.e., no mistakes.

With the challenges of the next millennium ringing in their ears, APEM members and guests stepped out into a welcoming and surprisingly warm mid-October afternoon. □

University News

By: B. Stimpson, P.Eng.

ASAE Paper Award

Dr. Stefan Cenkowski, P.Eng., Biosystems Engineering, was recognized at an Awards Luncheon of the ASAE for his paper entitled, "Microwave-Enhanced Denaturation of Sugar Beet Tissues."

Society Appointment

Associate Dean Doug Ruth, P.Eng., has been appointed Vice-President, Technology of The Society of Core Analysts.

Academic Appointments

Dr. Ying Chen has joined the Department of Biosystems Engineering as an Assistant. Her research interests are power and machinery, waste management, soil and tillage, and soil conservation.

Dr. Christine Qiong Wu has joined the Department of Mechanical and Industrial Engineering. Her research interests are solid-body mechanics, nonlinear dynamic systems, and biomechanics.

Commission Appointments

In the wake of the Flood of the Century, two academic staff have been appointed to Commissions. Dr. Don Burn, P.Eng., Head, Department of Civil and Geological Engineering, has become a member of the Manitoba Water Commission. Dr. Slobodan Simonovic, P.Eng., Department of Civil and Geological Engineering and Director, Natural Resources Institute, will sit on the International Red River Basin Task Force of the International Joint Commission.

Grand Opening of the Antenna-Microwave Research Facility

Deputy Minister Jim Downey opened the Antenna-Microwave Research Facility in the Department of Electrical and Computer Engineering on September 23. □

Council Reports

Tuesday, September 9, 1997

By: A.N. Kempan, P.Eng.

AT WHICH COUNCIL CONSIDERS THE MANY FACETS OF PROFESSIONAL MEMBERSHIP

Council meetings develop a theme as they unfold, and this meeting was about membership: who is qualified to be an engineer, what it takes to maintain that status, and who will join us in the future. This meeting hosted two special guests: John MacLeod from Flin Flon and Rick Lemoine representing the Geoscientists of Manitoba.

The meeting began with a review of Issues and Activities and with a favourite topic, the APEM's agreement with the Architects. Councillor Washchyshyn informed Council that another meeting is necessary to finalize the agreement. Council discussed an idea brought forth by the Continuing Competence Committee recommending that the membership renewal year be staggered similar to the system with drivers' licencing. This would be necessary, since the large amount of data generated by the proposed Mandatory Professional Development Program would overwhelm staff if it came in once a year. Council agreed to implement the staggering of membership renewals.

John MacLeod's mission to Council was to discuss the formation of a Kelsey Chapter in Flin Flon. Flin Flon has about 60 graduate engineers with half registered. Council passed a motion of encouragement and the Thompson Chapter offered startup assistance. Flin Flon is unique because it straddles the Saskatchewan/Manitoba border and presents jurisdictional challenges.

Council received a rather thick submission from the Professional Development Committee, outlining the pilot project for mandatory professional development. Under the pilot project, volunteers would undertake the program as a way of testing its operation. As is to be expected with any major change, some members are not happy with the program. It's expected that a resolution to adopt a mandatory development program will be presented at the Annual General Meeting in 1998, with the provision for a members' referendum to approve or reject.

Former president Don Osman presented a draft Review of Reinstatement Policy. This outlines Association procedures in dealing with members who have inadvertently let their memberships lapse or have voluntarily resigned and wish to be re-instated. This was partially in response to people who forget to renew and wish to be re-admitted. Council had no sympathy for these individuals as it was felt the deadline for renewal was identical to the deadline for a tender and it was the members' responsibility to renew in a timely manner. Shirley Matile presented revisions to the policy on non-practising members which outlines how a member enters the "retired" category and how that member may subsequently return to "practising" status.

Council received from Dave Ennis, Executive Director and Registrar, a financial and administrative plan for enforcement of the Act, which can be summed up as the four P's: Public Awareness, Persuasion, Persistence, and Prosecution. The Association will actively pursue employers to use professional engineers where the nature of their business requires them.

Finally, Council considered a document containing letters from several natural scientists' associations which requested that natural scientists retain an exclusion clause under The Engineering and Geoscientific Professions Act, currently in the proposal stage. Basically, this act states that the practice of engineering will not limit the right of natural scientists to pursue their profession. □

Tuesday, October 7, 1997

By: W.G. McKay, P.Eng.(Ret.)

AT WHICH COUNCIL DISCUSSES EXTRAORDINARY WORK EXPERIENCE, MANDATORY PROFESSIONAL DEVELOPMENT, AND LEGISLATION

This Council meeting was the last one for President Mal Symonds and, although the attendance was only slightly more than a quorum, it did finish earlier than many of the previous meetings.

Previous Work Experience

The Experience Review Board has been asked to consider receiving requests for consideration of exceptional work experience obtained prior to academic qualification. (Normally, all acceptable engineering work experience must be obtained after academic qualification.) Such an example could be that of a co-op student, or a graduate of an Institute of Technology. Council approved the concept of charging a fee of $100.00 for anyone wishing such previous work experience to be evaluated, this payment to be refunded upon acceptance of any pre-academic-qualification work experience. It was agreed that a national recommendation on this issue, expected next year, could necessitate further review of this requirement.

Continuing Competence and MPDP Compliance

The Continuing Competence Committee presented an outline of recommendations for a pro-active approach to "sanctions" for non-compliance with the mandatory professional development program (MPDP). The intent is to assist the individual in defining scope of practice and filing the report, rather than enact a write-off of registration for non-compliance. Such assistance could imply considerable staff and volunteer involvement. It was noted that while the Council may set units of professional development on one hand, the numbers should be carefully monitored as to whether these are realistic and/or achievable. There is a learning process involved for both the Council and the members of the Association in this new activity, and the Pilot Program may yield further information as to its operation.

Progress of the New Act at the Legislature

The passage of the new Act through the Legislature is slow as presentations by the Manitoba Association of Architects continue despite the previous Memorandum of Understanding. Further consultations with the Architects will continue.

Another problem with the new Act arises from the proposed inclusion of a number of geological professions. In essence, the problem is similar to the long-standing problems related to the use of the titles "Engineer" and "Professional Engineer". Lobbying of the legislature by some factions of the geoscientific community, and by groups outside the geoscientific community, as to the inclusion or exclusion of titles, has raised concerns by the Labour Department.

Review of CCPE Activities

Doug Chapman, APEM's CCPE Director, reported on the progress of the reorganization of CCPE's governance structure. The selection of a new President (Executive Director) has been started, but the results have not been satisfactory. Much work remains to be done on the whole organization in matters such as by-laws, letters, patents, etc. However, he reports that the Directors appear to be of unity of purpose in the ongoing reorganization.

The President expressed his thanks to the councillors for their dedication during his term of office and observed that, while the year had quickly passed, it had been enjoyable and fulfilling. □

Environmental Ethics and Responsibility – an Introduction

By: W.A. Dowie & P.T. Elefsiniotis

In order to ensure a sustainable future, an environmental education program is key to creating informed and responsible consumers, workers, and managers. Before an environmental science/engineering program or environmental management system training session is attempted, an environmental ethics short course should be undertaken. In order to act responsibly toward the environment – thus creating an ecologically sustainable future – a student must know what environmental responsibility means.

The short course would describe an environmental ethic and how individual responsibility borne out of this ethic could affect the natural environment. To develop this short course, preparations of moral theory must be studied. Moral development tools could be incorporated out of the context of a childhood experience, since caring for the environment is a relatively new endeavour for our industrial society. Many adults are in an early stage of moral development when addressing environmental issues. Thus, the instructor should be aware that the student may need to grow into a more sophisticated environmental awareness stage. This is very important so that the student will be developing an intrinsic environmental ethic, rather than just realizing and conforming to environmental rules and regulations for the rest of their lives. The short course would address contemporary issues in order to have an applied ethics approach stimulate discussion amongst the students.

For many people in contemporary western culture (and especially for many in policy-making positions), science and technology offer the only hope for solving environmental problems. Since environmental problems are frequently complex in technical nature, it is reasonable to expect that technological solutions will provide the right answers. Technological solutions to environmental problems can often be inadequate in and of themselves, because they are developed within a "reductionist" framework. This is an attitude which believes that the ability to reduce a problem to its technological components leads to an ability to solve the problem on purely technological grounds. This approach, however, fails to question the very nature of the human activity which creates the environmental problem. Questions associated with the nature of human activities are fundamentally ethical questions. Moreover, these questions have not been the focus of traditional educational programs in science and engineering which produce the majority of today's 'technocrats'.

In general, environmental ethics can be defined as the concern for the preservation of nature, expressed in a system of values. This philosophical system contrasts sharply with the ethic of domination of nature by people (also called the dominator ethic), which has been prevalent in many industrialized societies. Environmental ethics assumes that human behaviour towards nature is governed by moral norms. From a theoretical standpoint, environmental ethics attempts to provide answers to the following three issues: a) explain what these moral norms are; b) explain to whom or to what humans are responsible, and c) indicate how these responsibilities are justified. Depending upon the answers to these issues, a variety of environmental ethics has emerged. Some ethicists may argue that our responsibilities to nature are only indirect (i.e., we are directly responsible to other human beings only). Others may argue that we are directly responsible to the whole ecosystem (including both biotic and abiotic species), and that our responsibilities are based on the moral standing of these natural species.

It is advocated that a sustainability ethic should pervade all areas of environmental decision-making activities. A sustainability ethic can be defined as an obligation to the environment made up of two components: one targeted to pollution prevention, and the other targeted to pollution remediation. The first component refers to the belief that certain important environmental decisions and procedures ought to be implemented, including environmental impact assessment, environmental auditing, waste minimization, and life cycle analysis. These decisions should be applied within the philosophical context that economic development is intertwined with principles of equity, social justice, environmental responsibility and accountability. The second component refers to the cultivation of a sense of moral values specifically related to pollution remediation.

The scientists and the engineers in the academic world have already responded to this challenge by slowly adding at least a chapter on "environmental ethics" to textbooks outlining introductory environmental science and engineering. It is worth noting that students who evaluated the first edition of one of these textbooks recommended that "environmental ethics should be given greater emphasis". It is suggested therefore that professionals in the environmental field may benefit as well in their day-to-day operations if they are exposed to the fundamental concepts of environmental ethics and responsibility. □

One Hundred Years of Radio

Adapted from an article in Quebec Science, January 1997, by V.L. Dutton, P.Eng. (Ret.)

It was in 1820 that Oersted discovered electromagnetic waves. Following that discovery, many geniuses worked to understand, and use, this phenomenon. Amongst them were Hertz, Lodge, Branly, Popov, Fleming, Marconi, and Canada's Reginald Fessenden. There are those of us who would claim that radio, as we know it today, was due to Fessenden, not to Marconi – but Marconi had a wealthy father!

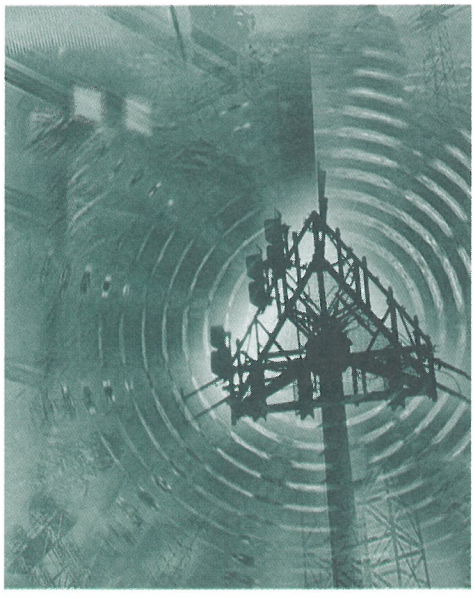
Fessenden was born in Magog, Quebec. Forced to leave school at eighteen because of financial constraints, he ultimately moved to the US when his genius was not recognized by the Canadian "authorities" who opted for Marconi's system, even though all it could do was send a wave of a single frequency. Information was sent, as amateur radio operators still do today, by interrupting the signal to give a series of short and long sounds – the code developed by Morse in 1837. Fessenden's contribution was to develop modulation – the AM with which we are familiar on our own radios.

Between 1899 and 1906, and using a transmitter tower near Niagara Falls, Fessenden succeeded in communicating, by voice, with a boat 16 km away. His microphone was from a telephone, already invented by another neglected Canadian. One of his transmissions brought a telegram from Scotland that let him know that his signals were able to cross the Atlantic as Marconi's had done a few years earlier.

On Christmas eve, 1906, Fessenden was ready to demonstrate his invention to the world. Starting with "Peace on earth to men of good will.", he sang and played his violin. The radio operators on some ships of the United Fruit Company, heading for the Caribbean, "could scarcely believe their ears." Fessenden was the first to transmit the human voice.

Being forced to move to the United States (is there anything new under the sun?), Fessenden went on to develop over 400 other inventions, amongst which were the galvanometer, the gyroscope, the first photocopier, a radio compass, and sonar.

The next time you are at a PTA meeting, you might want to check with the Science Teacher to see what is being taught to the next generation about Science History. □



Employment Agreements For Businesses

By: G. Robson, Aikins, MacAulay & Thorvaldson

Knowledge-based business needs and depends on skilled employees. Skilled employees who are privy to your business' confidential information, use your computers, or develop products may place you in a vulnerable position if they have not entered into an employment agreement with your business.

An employment agreement contains the terms and conditions of employment with a business. An employment agreement may contain all of the "bells and whistles" or only a few select provisions that are most important to the parties. However, the agreement (which should be made between a knowledge-based business and each of its employees) should contain, as a minimum, provisions dealing with confidentiality, protection of hardware and software, developments, non-competition, and non-solicitation.

The knowledge of the business or, in other words, its confidential information, must be closely guarded. "Confidential information" essentially means any information concerning the business and its affairs, the dissemination of which might prove prejudicial to the business. The agreement should contain a confidentiality provision where the employee agrees to keep information in strict confidence and take precautions against its disclosure except as required for the employee to perform duties. The definition of "confidential information" and the confidentiality provision should be carefully spelt out.

Proper use of hardware and software is a concern of a knowledge-based business. Therefore, the agreement should stipulate that the employee agrees to take all necessary precautions to protect the computer systems and software (whether owned, licensed, or used by the business). Further, the employee should agree to comply with the business' technology protection policy. A "technology protection policy" defines for what purposes the employee may use the computer system. A broad protection provision and a comprehensive technology protection policy are integral parts of a practical employment agreement for a knowledge-based business.

The development of new ideas and products – "developments" – is crucial to the survival of a knowledge-based business. "Developments" include things such as software, documentation, data, designs, and reports made by the employee, during employment. A developments policy should be included as part of the agreement to ensure that the employee is deemed to have assigned ownership of any development automatically to the employer.

From time to time, employees may leave the business. Although an employment agreement cannot restrict an employee from plying his or her trade, it can provide you with a period of time in which the employee cannot compete with your business. The agreement should specify that during employment, and for a certain period afterward, the employee will not in any way be involved with a business that competes with your business within a certain territory. This way, a business can protect its competitive position from being eroded by wayward employees.

Lastly, while losing an employee may be bad for business, what if that employee attempts to take other employees with him or her? To avoid such a devastating situation, the employment agreement should contain a non-solicitation provision where the employee agrees not to solicit your other employees to leave you to work for him or her. The agreement should prohibit such solicitation, in any way, both during employment and for a certain period afterward. Further, the agreement should apply to the solicitation of both your current and recent employees. One way to retain employees is to prevent them from being plucked from your employ for a certain period of time.

There are many other important provisions that should be included in a complete employment agreement. If you have not entered into an employment agreement with each of your employees, you should ask yourself not whether you can afford to have such agreements prepared, but, rather, whether you can afford not to. □

© July 1997, Aikins, MacAulay & Thorvaldson. All rights reserved. This article was written for general information purposes only and should not be construed as legal advice or opinion. This article may be reproduced in whole or in part with credit given to Aikins, MacAulay & Thorvaldson and Graham Robson.

Graham Robson practices technology law with the Technology Law Practice Group at the Winnipeg law firm of Aikins, MacAulay & Thorvaldson. If you have any questions about this article or about other technology law matters, please contact Graham at 204-957-4668 or ger@aikins.com. The Technology Law Practice Group invites you to visit the Firm's web site at http://www.aikins.com.

Assistance Sought for Developing Countries: "Tools for Development"

By R. Chant, P.Eng.

The "Tools for Development" Program was initiated by Mr. Roy Megarry, Chair of the Globe and Mail, and is being co-ordinated by the Globe and Mail, Toronto, on behalf of Care of Canada. The idea was conceived as early as 1983, after a visit to Lima, Peru, where Mr. Megarry observed a squatters' settlement of approximately 400,000 on the city's outskirts. The aim of the program is to create self-sustaining enterprises, focused on the concept that developing countries need equipment, not charity. The program started in Peru, but is now being expanded to other parts of Latin America, including Costa Rica.

Donations of redundant equipment are being sought, which is not a straightforward process. Recipients are sensitive to the possibility of the dumping of "junk" but, at the same time, overly sophisticated equipment may also be unproductive.

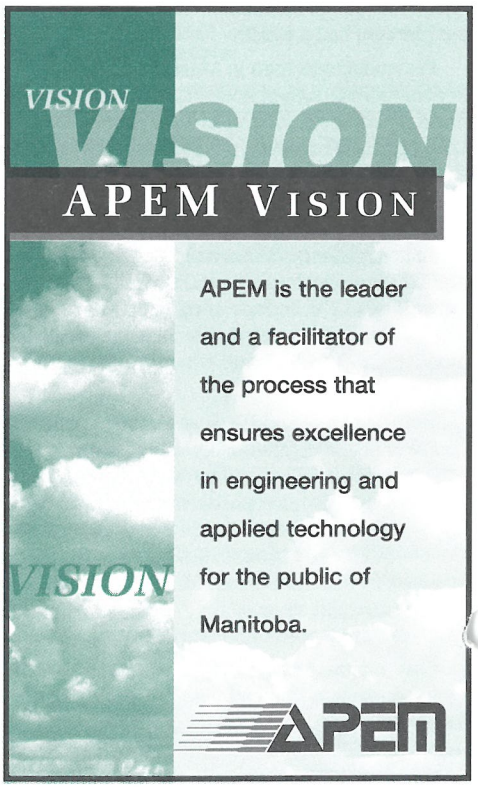
Currently, equipment is being sought in the following categories:

METAL-WORKING
TEXTILES
AUTOMOTIVE
SHOE-MAKING
WOOD-WORKING
MISCELLANEOUS

Miscellaneous includes electric motors, compressors, fork-lift trucks, and pallet trucks. Detailed lists are available.

Equipment is assessed in Canada to determine its condition and usefulness. It is also assessed by the potential recipient based on its market value. The donor receives a Tax receipt, upon request, in accordance with Revenue Canada regulations, and the recipient pays a fair price for the equipment.

Professor Ray Chant, as a Volunteer Advisor for CESO, an organization with similar aims as CARE of CANADA, has been asked by CARE to contact potential donors in Manitoba. He is anxious to solicit the assistance of his former students, colleagues, and friends to identify sources of suitable redundant equipment. Ray may be reached at the following numbers: phone (204) 452-5469, fax (204) 452-5469 or 474-5156, e-mail, rchant@wpcusrgrp.mb.ca. □



The Future Isn't What It Used To Be!

By: B. Stimpson, P.Eng.

There seems to be something in the human psyche that tends to gravitate towards seeing obstacles and limitations rather than new opportunities. Millennial catastrophes just around the corner? The end of new scientific discoveries (one recent author has so argued)? Cornucopia or marginal living ahead? In considering these and other issues of the future and our ability to predict it, it is instructive to examine the lessons of history. In them we will find that the Cassandras of the past do not have a good batting record as prognosticators. Are our current Cassandras likely to perform any better?

"Our numbers are burdensome to the world which can hardly support us."
Tertullian, 2nd century A.D.

"The world is already full, and the population too large for the soil."
St. Jerome, 4th century A.D.

"Professor Goddard does not know the relation between action and reaction and the need to have something better than a vacuum against which to react. He seems to lack the basic knowledge ladled out daily in high schools."
1921 New York Times editorial about Goddard's pioneering work on rockets in space.

"I think there is a world market for maybe five computers."
Thomas Watson, IBM Chairman, 1943.



"(Babe) Ruth made a big mistake when he gave up pitching."
Tris Speaker, 1921.

"It is an idle dream to imagine that...automobiles will take the place of railways in the long distance movement of... passengers."
American Road Congress, 1913.

"Flight by machines heavier than air is unpractical and insignificant, if not utterly impossible."
Simon Newcomb, astronomer, 1902.

"The phonograph...is not of any commercial value."
Thomas Edison, its inventor, 1880.

The first portable computer (The Osbourne Portable) put on the market around 1980 was ridiculed because of the small size of its display screen.

"There is no reason for any individual to have a computer in their home."
Ken Olsen, President of Digital Equipment Corporation, 1977.

"The odds are now that the United States will not be able to honor the 1970 manned lunar landing date set by Mr. Kennedy."
New Scientist, 1964.

"Who the hell wants to hear actors talk?"
Harry Warner, Warner Brothers Pictures, 1927.

"There is no likelihood that man can ever tap the power of the atom."
Robert Millikan, Nobel Prize winner in Physics, 1920.

Adopt the attitude that the future is open; the evidence appears to be on your side. □

Honourary Life Membership and Outstanding Service Awards

(Cont'd from page 1)

University of Western Ontario, joined APEM in 1956, and has been a member of the Association for 41 years.

Charlie has also been a member of a number of Canadian and American learned societies, and a warden and recently the Senior Supervising Engineer of Camp #8 of the Ritual of the Calling of an Engineer.

It could nearly be said that Charlie has been a "man for all boards and committees" of the Association. From the listing in the citation, the count is 16, ranging from Awards, Salary, and Manscett Liaison to the Board of Examiners and Admissions. His terms as a committee member, and in many instances Chair, have not been for a year or two: they vary from three to 15 years. All of this involvement can be summed up in 97 committee years – a truly great effort. It is no surprise that he was the recipient of the first Meritorious Service Award in 1971!

In 1992, Charlie retired from a managerial position with Centra Gas. He has also given freely of his service to his church and lodge, and to the community. An Honourary Life Membership has been given to a most deserving recipient for his service to the Association and the profession in Canada.

Outstanding Service Award

The Outstanding Service Award recognizes outstanding service to, or on behalf of, the Association. The Outstanding Service Award was instituted in 1971, since which time 38 awards have been made.

Doug Chapman joined this Association in 1974 and has been involved in many committees and boards, such as the Awards, Salary, and Nominating Committees, to name but a few. He has been a member (and is currently Chair) of the Board of Examiners for seven years. In all, his activities have totalled an impressive 38 committee-years. Since 1995, he has been the APEM director on CCPE. Doug, in his service to the Association, has given of his outstanding ability, and has been generous in the extreme in his commitments.

All of this has been over and above his position as Manager of the Systems Performance Department at Manitoba Hydro.

A very fitting award for an engineer who has given freely of his time and talents to the Association. □



Honourary Life Member Charlie Bouskill (l) and Outstanding Service Award Recipient Doug Chapman.

Opportunities in the Energy Industry for Manitobans

(Cont'd from page 5)

To encourage sustainable development, three strategies were recommended. Firstly, technical education about the various energy technologies must be undertaken in the region. This would reduce resistance to alternatives and prejudice against other energy technologies. The second strategy was to promote all energy technologies and local resources (technology, labour, material, etc.). The third strategy was to improve energy-supply security through diversification.

To promote youth opportunities, three strategies were recommended. The first strategy was to strengthen international student exchange programs, and to enhance pertinent skills (such as language learning and cross-cultural education) The second strategy was to foster international work-internship programs to develop business contacts and promote long-term work relationships with other APEC members. The third strategy was to promote collaborative R&D activities in which partnerships are formed among educational, research, industrial and governmental institutions, which would transfer technology between the economies.

Where to go from here

Anyone interested in the Youth Core Team report or other topics covered in the International Energy Symposium may contact me at (204) 453-5495 or srangara@tetres.ca. More information on Canada's APEC activities for 1997 may be found at the Department of Foreign Affairs and International Trade's web site (222.dfait maeci.gc.ca /~apec). The Youth Coordination Bureau is under the guidance of TG Magazine (a media and educational company that promotes interactive, hands-on and relevant learning opportunities for youth). For those who want more information on the opportunities in the Asia-Pacific region, you may search TG magazine's web page at www.tgmag.ca. Another important document which outlines potential opportunities is the report from the APEC Economy Leaders Meeting which was recently held in Vancouver. □

CANADIAN ENGINEERS AWARDS

Call for Nominations

The Canadian Council of Professional Engineers (CCPE) is seeking the nominations of Professional Engineers for the 1998 Canadian Engineers Awards.

The Canadian Engineers Awards are presented annually by the CCPE to recognize the individual contributions of professional engineers to engineering excellence and community service.

Nominations of professional engineers are sought in five categories:

Gold Medal: for exceptional achievement and distinction in a field of engineering;

Young Engineer Achievement: for outstanding contribution in a field of engineering by a professional engineer of 35 years or younger;

Professional Service: for outstanding contribution to a professional, consulting or technical engineering association or society in Canada;

Community Service: for exemplary volunteer contribution to a community organization or humanitarian endeavour; and,

Distinction in Engineering Education: for exemplary contribution to the teaching of engineering at a Canadian university.

Deadline for nominations is 4:00 p.m. EST on Friday, February 13, 1998. Award winners will be honoured at the Canadian Engineers Awards Gala in Vancouver, BC on May 23, 1998.

Terms of Reference for each award and Nomination Forms are available from the CCPE by contacting Lorelei Scott, CAE, Manager of Member Services. Tel: **(613) 232-2474 (ext. 241)**, e-mail: **lorelei.scott@ccpe.ca**; or by fax **(613) 230-5759.**

APEM's Awards Committee would be pleased to present your nomination on behalf of this association.

Canadian Council of Professional Engineers

Conseil Canadien des Ingénieurs

Coming Events

Interpretation and Enforcement of Construction Contracts

December 11-12, 1997, Winnipeg, Manitoba
Radisson Suite Hotel Winnipeg Airport

For more information:
Phone: 1-888-374-2338 ext. 222
E-mail: epic@epic-edu.com

One-Day CSA Seminar

Changes to the Canadian Electrical Code on Class 1 Hazardous Locations

January 14, 1998, Winnipeg, Manitoba

In January 1998, all new installations and equipment used in explosive atmospheres must follow the new three Zone International Electrotechnical Commission (IEC) method of classifying Class 1 hazardous locations (Gas and Vapours).

For further details and seminar registration information, please call:
Phone: (416) 747-4044
Toll free: 1-800-463-6727

Engineering Student Dinner

February 12, 1998, Holiday Inn Crowne Plaza

For details please call Ellowyn Thornton-Trump
Phone: 956-0980
E-mail : Trump@wardrop.com

Stormwater & Related Modeling Retreat

February 16-20, 1998, Toronto, Ontario

For more information, contact Lyn James:
Phone: (519) 767-0197
E-mail: info@chi.on.ca
web site: http://www.chi.on.ca

Job Wanted

APEM member seeking challenging career opportunity, with professional growth. Diversified experience with project management skills; municipal works/infrastructure maintenance and construction; land development; road construction, maintenance and upgrading; and building construction experience. Contact Bill, at (204) 822-9319.

CHANGE OF ADDRESS/EMPLOYMENT NOTIFICATION

Full Name _____ Employer _____

New Address _____ Position/Title _____

City _____ Province _____ Bus. Tel. _____ Date Effective _____

Postal Code _____ Country _____ E-Mail _____

Mail to: A.P.E.M., 850A Pembina Highway, Winnipeg, Manitoba R3M 2M7 ■ Fax (204) 474-5960 ■ E-Mail: apem@apem.mb.ca