THE MANITOBA
Professional Engineer
August, 1995
APEM 75

Main Street and Norwood Bridges Project

By: J.W. Bogan, P.Eng. & C.P. Gray, P.Eng.

The Main Street and Norwood Bridges, which currently carry 60,000 vehicles per day, form a primary artery between the St. Boniface/St. Vital areas and the Central Business District in Winnipeg. The two existing river bridges, the Main Street Bridge (over the Assiniboine River) and the Norwood Bridge (over the Red River), were constructed between 1930 and 1931. Despite several repairs and upgrades over the years, the deterioration has advanced to the extent of non-repair, and the bridges are near the end of their structural lives. The bridges are expected to be closed by the end of 1996. The existing CN Mainline Overpass was built in 1911 to accommodate rail, vehicular, and pedestrian traffic. At present, the CN Mainline Overpass has two rail lines. A freightline structure just south of the CN Mainline Overpass was built in 1914 and was abandoned in 1988. The present roadway geometry is sub-standard in its lane widths, horizontal alignments, and vertical and horizontal clearances. There are high collision-statistics around the overpass.

The overall project objective is to provide a traffic link that will eliminate both structural problems with the existing river bridges and the existing traffic congestion. The traffic link will address safety concerns, future traffic growth, and community concerns involving aesthetics and environmental issues. Functional planning studies involved two major river crossings, railway overpasses, and extensive underground utility relocations including a flood pumping station and major trunk sewers. Four lanes of traffic each way with two left-turning lanes for the northbound traffic at Mayfair Avenue are required for future traffic volumes. Vertical headroom clearance is to be increased from the existing 3.58 to 5.0 metres to meet provincial standards. Environmental protection of all construction sites is required including fisheries, water system and river banks. As well, protection of sites with archaeological significance is required.

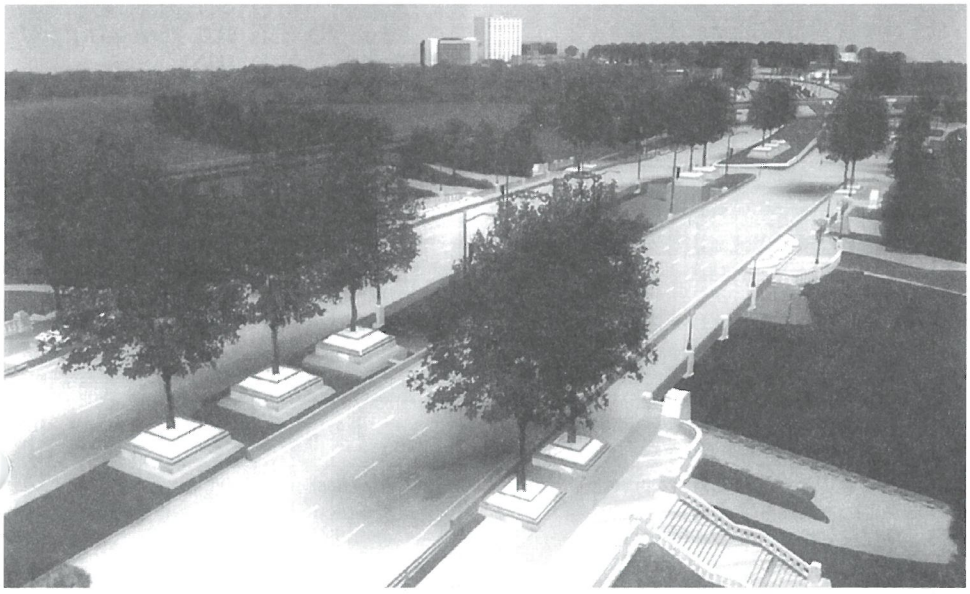
The CN Mainline Overpass construction phase included the removal of the abandoned freightline structure, temporary modifications to the existing overpass, and construction of the new CN Overpass. The demolition of the freightline structure made way for the new overpass structure on the south side of the existing CN Mainline Overpass. The existing overpass consists of 12 simple-span steel girder frames. The steel spans are relatively short and skewed sharply at the east side. These two existing geometric factors resulted in a congestion of piers over the new northbound roadway. Because major modifications to the existing overpass would be required, it was decided to replace the existing overpass. Also, it provided an opportunity to upgrade the overpass to a Cooper Rating of E-90 (from the existing E-55 to E-60), and to improve the horizontal geometry with a wider curve.

A new overpass pier interferes with an existing traffic lane. Also, reducing Main Street to three lanes for the duration of construction would severely impact traffic flows and would not be acceptable to the public. Therefore, modifications to the existing CN Mainline Overpass included removing an existing steel pier (to provide access for an additional traffic lane) and two existing short-spanning steel girder frames, upgrading the adjacent steel piers, and installing a new long-span drop-in steel girder frame. Dominion Bridge completed all site work within 14 hours to minimize disruption to rail traffic.

The new CN Mainline Overpass is a continuous five-span hybrid superstructure of steel girders with reinforced concrete on reinforced concrete piers and driven piles. The new overpass spans the northbound and southbound lanes with a single pier between the northbound and southbound traffic. As well, the wider rail curve will allow faster rail speeds. Other design considerations are an aesthetically pleasing structure consistent with the overall area, accommodation for a future transit corridor, limited site space, and potential riverbank instability. Construction is now underway and the general contractor, PCL Constructors Prairie, Inc. is carefully working around existing traffic to minimize disruption. The CN Mainline Overpass is scheduled for completion in December of 1995.

The new northbound Main Street and Norwood Bridges will be constructed on the east side of the existing bridges. After construction of the northbound bridges is complete, all traffic will be relocated temporarily to the new bridges, and the old bridges will be demolished. Four-lane southbound bridges will be constructed at the old bridge sites.

The new northbound Main Street Bridge will consist of two continuous spans, 54 and 42 metres in length. The structure will carry four traffic



New Main Street Bridge.

Continued on page 7

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WE HAVE LOST CONTACT. MAY WE HAVE AN ADDRESS?

R.R. Brodeur
C.A. Carnegie
A.Z. Delecki
N.Y. Haddad
M. Husain
B.R. Jackson
R.A. Jeria
A.K. Kading
A.F. Linden
C. Mistry
M. Pawlak
L. Stocco
E.B. Wilson

Canadian Engineers Gain Improved Access to North American Markets

By: R. Hadley, CCPE

In Washington, D.C., on June 5, 1995, Canadian Engineers took a big step toward easier access to North American markets by signing a reciprocity agreement with their counterparts from Mexico and the United States.

This agreement will now be recommended to the NAFTA Commission and, if accepted, will become a sub-agreement to the North American Free Trade Agreement and subject to its rules and regulations.

In general terms, this agreement provides for reciprocal registration for registered professional engineers who have either:

Continued on page 4

ENGINEERS-IN-TRAINING ENROLLED MAY & JUNE, 1995

A.D. Asmundsson
K.R. Bindle
J.G. Church
F.J.J. Coreau
B.O. Dijeh
A.A. Dizon
D.O. Dmitrowicz
J.R. Foord
A. Gornik
J. Hu
R.J. Kastalnych
L. Korenbaum
J. Lukaseder
D.A. Marsh
Z. Mlinarevic
C.F. Mora
S.G. Nikel
S.K. Ostermann
T.W. Padfield
P.G. Rowbotham
K.B. Sarson
K.Y. Sze
S.P. Thomas
F.J. Vanbeselaere
E. Vera
I. Witkowska
M. Yu
D.A. Zolinski

REINSTATEMENTS MAY & JUNE, 1995

A. Contant (PQ)
R.W. Cumming (ON)
K.C. Foster (BC)
O. Hawaleshka

MEMBERS DEREGISTERED JUNE, 1995

A.N Arvidson
J.A. Burgess
A.E Burstein
C.A. Carnegie
H. Dashevsky
A.J. Deane
G.A. Decuypere
A.Z. Delecki
M.Z. El-gamal
J.W. Fitchett
S.K. Ghosh
R.H. Glassford
R.W Gray
M Green.
B.A. Gustafson
N.Y Haddad
D.C. Hind
C.C. Ho
P.J. Horvath
L.S. Howard
B.R. Jackson
R.A Jeria
A.K. Kading
R.C.P. Kost
F.W. Lee
V.F.W. Lessoway
A.F. Linden
R.W. McKnight
G.J. Macdowall
B.S. Mackid
R.M.J. Massinon
C. Mistry
D.M. Mitchell
D.A.K. Moir
B.R. Ominski
K.S. Patino
D.J. Phelps
G.R. Pinkos
G.R. Reese
A.H. Robbins
D.M. Rogowsky
M.J. Ross
D.A. Shearer
F.J. Silva
S.J. Singh
C.D. Smith
G.A. Smith
R.P. Smith
E.W. Sobkowicz
H.H.F. Sutherland
P.W. Tataryn
J.G. Thomas
David Watson
A.C. Yim
A.A. Zaghloul
A.H.I. Zeeb

LICENCES ISSUED MAY & JUNE, 1995

E.J.G. Boutin (ON)
A.E. Cavadeas (WI)
W.K. Cheng (ON)
N.A. Huszar (PQ)
K.E. Jorgensen (CO)
M.J. Keon (ON)
K.K.L. Louie (CO)
M.J. Peden (SK)
T.W. Williams (MN)
E.G. Wong (CO)

RESIGNATIONS JUNE, 1995

A. Bookbinder (Dec/94)
D.W. Brown
F. Burford
J.E. Causgrove
G.A. Clarke
R.J.C. Cotterill
M.B. Crowle
A.W. Dales
F.P. DePaepe
C.R. Donnelly
G.R. Durnin (Dec/94)
I.B. Gillmore
G.N. Grunau
L.J. Hosaluk
K.R. Kernaghan
W.W. Lee
S. Liyanage
K.B. Mann
P.W. Martens
P.A. Palanuk
R.V. Parsons

NEW MEMBERS REGISTERED MAY & JUNE, 1995

S.N. Ager (SK)
J.P.J. Audet (AB)
B.K. Berglof (SK)
G.C. Blachford (SK)
W.W.N. Chan (AB)
R.F. Crowley (ON)
R.R. Deighton
D.G. Delaney (ON)
A.B. Dlugan
G.G. Firth (AB)
S.D. Gasser
A. Haberling (ON)
J.E. Hewitt (ON)
J.S. Ingram (BC)
G.B. Kennedy (SK)
P.J. Leduc (SK)
S.K. Lee (SK)
N.H. Leupolt (ON)
E.D. Lindquist
P.R. Manaigre
B.A. McEwan (ON)
R.L. McKay (BC)
R.J. McNeely (ON)
R.D. Mons (ON)
T.Q. Mosala (ON)
N. Papadopoulos (ON)
R.G. Prevost-Derbecker (ON)
J.A. Purvis (ON)
Y.S. Ro (ON)
I. Sabau
W.S. Smith
J.D. Sorby
K.R. Spence (ON)
K. Swiderski (ON)
C.H.T. Woo (AB)
R.J. Wreford (BC)

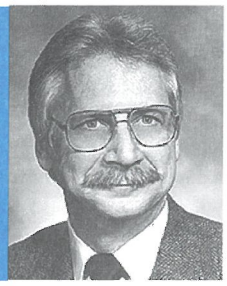
In Memoriam

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

T. Szekely
W.E. Tabbernor

President's Message

D.G. Osman, P.Eng.



Preventative Maintenance for the Professional Engineer

Everything we design, except for those environmentally unfriendly "use and dispose" items, requires preventative maintenance. Even the professional engineer needs preventative maintenance and updating in order to remain a valuable commodity to society. Without this maintenance, we will soon become "obsolete" and be cast aside by our clients/employers for more useful and productive entities.

The Council of APEM has determined that there is a need for a system to ensure that the members take the appropriate measures to maintain the required level of competence and be able to demonstrate this to the public and their clients in a relatively painless process. Has this decision been made in isolation without due consideration for whether there is a need for this new measure? NO ! We have always maintained a concern for the safety of the public as a priority of our operations. The safety of the public is like a beacon to help the Council make the tough decisions.

The mandatory reporting of the continuing education of the members is the first step in the direction of mandatory continuing competence. Does this make you uneasy ? Not if you have been making an effort to maintain your level of competence! It may even provide you with a level of comfort to know that your fellow engineers, as a result of this new initiative, will be maintaining the same high level of competence as you. It is considered by many other professions to be a strict necessity that all of their members be able to demonstrate and/or make declarations that they have taken steps to maintain their competence.

Historically, we at APEM have considered it to be the individual's responsibility, under the Code of Ethics, to continue on this "life-long learning" journey of professionalism. Some believe that this is a reasonable approach and ought to be continued into the foreseeable future...or at least until they retire. This is equivalent to the NIMBY syndrome. Mandatory reporting is the only truly responsible course of action to ensure that competence is ubiquitous within our association.

Is there a problem in the first place? We are not certain. Likely, if there is one, it is very limited and may not be particularly significant. Then why are we doing this? It would be unprofessional of us to put our heads in the sand and say that we don't believe there is a problem and that we need not be expending any effort to confirm whether or not there is a cause for concern. We need to be certain and demonstrate to ourselves, our peers and the public that we are professionals who have maintained our competence. Any areas of weakness in the system should be rectified before the public safety is threatened or the government or other outside agency intercedes to do the governing of our profession for us.

> **"We need to be certain and demonstrate to ourselves, our peers and the public that we are professionals who have maintained our competence."**

The Law Reform Commission, in its recently-published "Regulating Professions and Occupations", has made some 90 recommendations to the provincial government. Some would require that we maintain our competence and that, if the Association's entrance requirements were to be increased, all existing members would be required to demonstrate that same level of competence. There is also provision for a peer-review process to ensure that our members remain competent. I would expect that our members would have no difficulty either becoming, or demonstrating that they are, current. The peer review process would help them demonstrate that they are already competent and serve to remind the members to continue in their efforts.

APEM is not alone in coming to these realizations. In keeping with this trend, the proposed Engineering and Geoscientific Professions Act will provide for mandatory continuing competence. We also need to hear more from you, the membership. Therefore, the intent is to have a proposed By-Law, making the reporting of professional development mandatory, discussed at the Annual Meeting on October 21, 1995 and voted on at a subsequent meeting.

It is no longer acceptable to say we are members of a "Learned Society". Henceforth, we must view ourselves as belonging to a "Learning Society", or we will become redundant and obsolete in a world of changing needs. □

Councillor Eddy Voted 1995 Woman of Distinction

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

Dr. Ertrice Eddy, PhD, one of this Association's lay councillors, recently received a 1995 YM-YWCA Women of Distinction Award.

Dr. Eddy, a physiotherapist by profession (and an internationally acclaimed physiotherapist, at that!), is employed by the University of Manitoba's Faculty of Medicine. She was head of Physical Therapy, Medical Rehabilitation from 1981-1990, during which time, among her many accomplishments, she pioneered a national program to integrate visually impaired students into the physiotherapy classroom, helped therapists from developing countries come to Manitoba for professional upgrading, and served as Chair of the University's Employment Equity Implementation Committee.

Dr. Eddy is the epitome of professionalism. She is world-renowned in her chosen profession, with heavy international demands on her time, yet she has committed to, and has dedicated a significant proportion of her time to, the engineering profession. Not only is she a very active, energetic member of Council and of APEM's Professional Development Committee, she also served last year, as APEM's representative on the University of Manitoba's selection team for the appointment of the Dean of Engineering, and on the organizing committee for the Women in Engineering Advisory Committee's Capitalizing on Today's Challenges Conference.

Dr. Ertrice Eddy, PhD

APEM is indeed fortunate to have such a dedicated professional as a member of its decision-making body, and is proud that the community has honoured her with this award. Congratulations, Ertrice! □

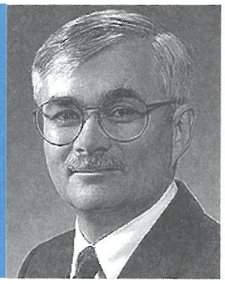
Correction

Information contained in the New Vice-President article (Manitoba Professional Engineer June, 1995) was not accurate. Catherine Stewart, P.Eng. was nominated for The Red River Community College Distinguished Alumni Award, but was not the winner. The Publication Committee apologizes for this error.

J.W. Bogan, P.Eng., Editor □

CCPE President's Message

Daniel Verrault, P.Eng.



It was with great honour and humility that I accepted, in April 1995, the challenge of the Presidency of the Canadian Council of Professional Engineers (CCPE). Since my appointment as the first full-time President, I have heard many divergent views on important issues which are challenging our profession. These include the definition of engineering practice and the advocacy role that our associations should play, on issues that fall inside and outside our narrowly-defined scope of practice. It has also been suggested that our profession is at a crossroads and must adapt to the changing environment if it is to survive. The Board of Directors of CCPE, which is composed of one representative from each of the twelve Provincial and Territorial Associations and Ordre, has initiated a comprehensive visioning exercise to address the above issues. This initiative, which will involve broad-based consultation with engineers from across the country, should culminate in a new vision that will serve our society and our profession well for years to come. Our resolve to redefine who we are, and how we govern ourselves, must be addressed to ensure that we are better positioned to face the challenges of the third millennium.

The signing, on June 5, 1995, of the Mutual Recognition of Registered/Licensed Engineers Agreement between Canada, the United Mexican States, and the United States of America, is an example of the rapidly changing world. Under this Agreement, an experienced Canadian engineer who is registered in a province that has implemented the Agreement may also practise in a state that is also a signatory. This is a momentous milestone, as we are the first profession to have implemented the NAFTA chapter on professional services. Qualified engineers will no longer have to write examinations in order to be permitted to practise engineering by receiving a temporary license issued by the host state. The transparency of national borders, which results from this Agreement, will enhance our ability to compete in these markets. Good public-policy action, and good business practice have created a win-win situation for our profession. Since ratification by each Provincial association is required in order to benefit from this Agreement, you must contact your Association prior to initiating any business venture.

Finally, I am well aware that this is just the beginning of a long consultative process. I welcome your participation and encourage you to make your views known to your provincial and territorial representatives, or directly to me at the CCPE office. □

Canadian Engineers Forecast Future

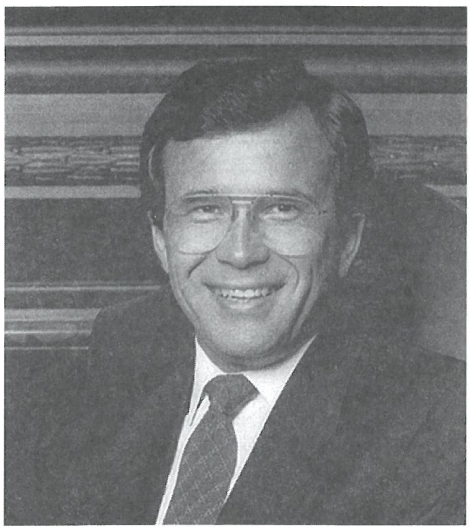
By S.M. Matile, P.Eng.

The 59th annual meeting of the Canadian Council of Professional Engineers was held in May, this year, in Winnipeg.

President Don Osman, CCPE Director Pat Feschuk and Executive Director Dave Ennis represented APEM; and because the meeting was held in Winnipeg (and because the organizing committee required an additional secretary!), I was privileged to be able to attend this particular meeting.

The focus of the meeting was the future of engineering in Canada. Those present were charged with the responsibility for developing a "vision" for the profession.

The keynote speaker for the "visioning" session was our Premier – the Honourable Gary Filmon, P.Eng. Despite the fact that he was heavily involved in the negotiations over the future of the Winnipeg Jets (his presentation was scheduled for 3:30 p.m. on Thursday, May 18 – a mere three and a half hours after what was supposed to be the deadline for the decision!), Premier Filmon left the negotiations, surrounded by media, to honour his commitment and deliver an inspiring message to the Board representing Canada's 156,000 professional engineers.



The Honourable Gary A. Filmon, P.Eng.

In his address, Premier Filmon told us that he has always considered himself, first and foremost, an engineer. He encouraged all members of the profession to practise leadership and problem-solving in the community – both as engineers, participating in such areas as environmental protection and technology transfer, and as politicians, leading the country in the globalization of trade, and participating in as many aspects of society as possible. He applauded CCPE for embarking on its visioning exercise, crediting his party's vision for its recent three-election "threepeat", and left us with the challenge of creating a powerful and well-rounded vision for keeping the engineering profession relevant for the future.

The "visioning" exercise which followed comprised many hours of soul-searching, gut-wrenching and crystal-ball gazing. Some 60-odd engineers were reminded of Albert Einstein's famous quotation "the significant problems of our times cannot be solved by the same level of thought that we had when we created them". They then attempted to develop a vision for the future of the profession without considering, at least this time around, strategies or processes for implementation. This, apparently, was an extremely onerous task for some who, being "typical" engineers, found it difficult to deal with the abstract as opposed to the detail, or, to put it metaphorically, the tree as opposed to the leaves. At last, however, on the third day, a "vision" emerged: that of engineering as the management of technology, with increased emphasis on leadership, sustainability, continuing education and communication, in an environment that welcomes diversity, and with continued focus on the application of science, integrity, ethics, creativity and the desire to make a contribution for the betterment of society. (Or, as Alberta's John McDougall so succinctly summarized it, the engineer of the future will be a manager rather than a designer/technologist, a leader/creator rather than a follower, a generalist rather than a specialist, an entrepreneur rather than a protectionist, results- rather than task-oriented, and concerned about sustainability as opposed to social benefits. The profession will become one of advocacy as opposed to silence, and stewardship instead of governance.)

Clearly, much work remains to be done. □

Improved Access to North American Markets

Continued from page 2

- a degree from an accredited engineering program and 12 years of experience (minimum 8 years registered), or
- a degree from a non-accredited engineering program and 16 years of experience (minimum 12 years registered).

Daniel Verreault, P.Eng., President, Canadian Council of Professional Engineers, called the agreement a milestone and added that the agreement represented "meaningful gains for Canadian engineers under the NAFTA." As an example, he said the agreement would allow experienced Canadian engineers access to the U.S. without having to write lengthy American competency examinations.

Verreault added that these gains are important to all Canadians. "Canada is the world's fourth largest exporter of engineering expertise," he said, "and engineering is one of the major engines of our economy. The ripple effect could provide a positive boost to most sectors of Canada's economy." □

Professional Development

Impact of Technology on Decision-Making

By: P.C.H. Wong, EIT

On Thursday, May 4, Brian King, P.Eng., President of Millenium 3 Inc. Virtual Training & Consulting, discussed Impact of Technology On Decision-Making at a breakfast meeting organized by the APEM's Professional Development (PD) Committee. Brian served in Canada's Air Force for 23 years. His presentation started with a brief history of economies from agriculture (land based, brute force mentality), to industry (e.g. railway systems), to information (brain based, rapidly changing).

Information Categories

In North America, a Dodge Caravan salesman dictates to the customer what (s)he should buy. By comparison, in Japan, a Toyota salesman customizes a new car to the customer's taste (he inputs the customer's habits into a database, then lets the customer test out different suspensions in a virtual reality booth) and delivers it three days later. It's time that we copy good business techniques from them. For instance, GM issues Visa cards in order to study potential customers' lifestyles.

Systems Don't Make Decisions – People Do!

Computers crunch and synthesize information, but humans judge and decide. It's important what you are making decisions on.

Determine What Business You are in Before You Determine the Organization to Support It

Wal-Mart got out of the warehouse business (store shelves are its warehouse) to save money. Market condition information is shared with the suppliers for them to plan the production better.

Informationalize

Putting more information into a product or pulling out more information from a product may present far greater opportunities (profits) than the original. An example of an informationalized product is a smart toilet which elevates the feet; warms the seat; measures weight, pulse, blood pressure and oxygen level; takes a urine sample; sets water temperature, angle of attack, and heat level of blow dryer; sends biological data to doctor's office via modem; and gives a medical report back to the user. This toilet is in use in Japan where 40% of households still have no indoor toilets. The next economy will be a bioeconomy since we have so many machines and no spare time, and are becoming more health-conscious.

Technology Is a Tool, Not a Tyrant

Expert systems can store retired peoples' expert knowledge (in a computer) which users can access by dialing up.

Brian King, P.Eng. discusses effectiveness and efficiency.

Look for Opportunities

In Canada, there is more employment in the computer industry than in the auto, auto parts, mining and steel industries combined. The electronics industry employs more people than the pulp-and-paper industry does. In B.C., more people are employed in the telecommunication industry than in the forest industry. Nova Scotia has more teachers (per capita) working in universities than fish processing, forest, and construction workers put together. It also has the most university teachers per capita in Canada.

Don't Be Fooled...When the Hype Diminishes

The Information Highway has problems: security, user-friendliness, learning curve, information overload, and high expectations. Using Internet information requires a huge amount of time just to check its validity.

Ensure you are Effective Before Making it Efficient

A newer technology is not always better. A computer may not be necessary if the pencil and paper would do. Rightsizing is not necessarily less-sizing. It is important to train people when you upgrade the technology.

See the Big Picture

McDonald's restaurants' success (1 new store every 17 days) is based on caring (they let customers sit all day, baby-sit children, allow parents of hospitalized children to stay at Ronald McDonald's House for free).

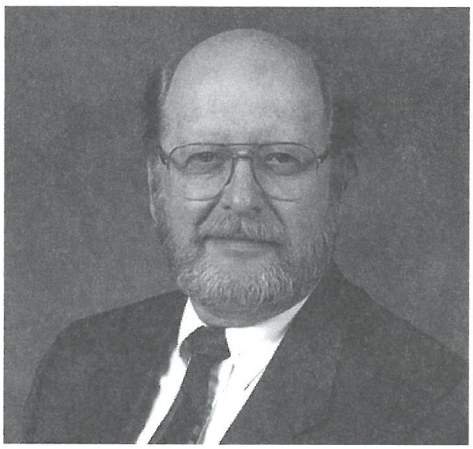
Brian's talk was informative and encouraging. It gave practical criteria for decision-making in the face of new technology. In closing, he quizzed the attendees on the difference between effectiveness and efficiency. The person who answered it correctly received a recyclable bag for a prize. □

Councillor Britton Honoured at the 1995 Spring Convocation

Councillor Ron Britton, a Professor in the Department of Agricultural Engineering at the University of Manitoba, was presented with the Dr. and Mrs. Ralph Campbell Award at the May, 1995 convocation ceremonies for his outstanding outreach activities.

The award is presented to university staff who "enlarge and enrich the contacts between the university and all segments of the community."

Ron has been active in his work with schools, potential engineering students, people in industry, the profession, and government extension-personnel. Included in the activities noted were his successful inclusion of practising engineers in his teaching program, his service on committees mandated to reduce biases toward women in engineering, his work with high-school students through programs such as Shad Valley, his articles and presentations to the public on light-frame building design, and his work with the University of Saskatchewan to exchange senior engineering design courses by two-way live interactive video – a first for the University of Manitoba. □



Councillor Ron Britton, P.Eng.

IEEE Conference Features Communications Innovations

By: D.R. Strang, P.Eng. – University of Manitoba Industry Liaison Office

The recent IEEE Western Canada Conference and Exhibition provided a showcase of the practical use of new technologies for technical communication, including CD-ROM and the Internet. Sponsored by Institute of Electrical and Electronics Engineers, University of Manitoba, TRLabs, and the Manitoba Telephone System, the conference and exhibition took place at the Delta Winnipeg hotel on May 15 and 16, 1995, and attracted about 160 delegates, including researchers, students, and practitioners of electrical and computer engineering. In addition to the presentation of about 60 papers, the conference featured a poster session displaying 40 posters and an exhibition of 11 booths.

Held every second year, "Wescanex" has become one of the best technical conferences in Western Canada. In the past, the conference has focused on three areas: communications, computers, and power. Although the areas have traditionally been considered distinct and isolated, computing has become so pervasive in the areas of communications and power engineering that the 1995 offering of the conference converged on the two streams of communications and power with the theme of computing running throughout both.

It only seems appropriate that, with such an emphasis on communications and computing, innovative uses of information technology would be employed to maximum benefit in the organization and presentation of the conference. Two major innovations were introduced, the first being the use of a "web site," which is a collection of information in electronic form freely accessible through the now-ubiquitous Internet.

A web site is simply one node on the World Wide Web (WWW), which has become an important communications and collaboration vehicle for exchanging all kinds of information on the Internet for both business and pleasure. WWW is a powerful medium for integrating all of the resources of the Internet. One of the most exciting aspects of the web is that it is very effective at blending text, graphics, sound, programs, and even video, into a free-form, yet seamless, hypermedia presentation that can be served up to a desktop computer.

It works like this: A user is reading through a page of text (often complete with graphics and sound), and with the click of a mouse button while pointing to a highlighted section of the text, links to a page of related text somewhere in the world. For example, after reading an article about twentieth century abstract art, one can link to and view a collection of colour prints of paintings by Picasso, Klee and Mondrian. Should our art-lover be a University of Manitoba electrical engineering student investigating power-factor correction systems, she can, with a few keystrokes, locate the abstract of a patent entitled "system of load flow calculation for electric power system."

Since the introduction of a web-browser entitled Mosaic in 1993, the web has become one of the most popular Internet applications. The reasons are simple: ease of use and utility – the ability to quickly provide a user with a rich blend of information formats (text, graphics, sound, etc) with the press of a button.

In order to access the web, it is helpful to have access to a WWW browser program, either by remote access, or by actually running one on your own computer directly connected to the Internet. If you wish to run a browser program, such as Netscape or Mosaic, you will need to have a computer with a TCP/IP connection, that is, a direct connection to the Internet.

The Wescanex '95 site, in place several months before the conference, provided as-it-happened information to organizers and delegates alike in electronic form, from the call for papers (papers were submitted in electronic form) to registration and exhibition information. And, perhaps most importantly, the site continues to provide access to the complete conference proceedings in a common, compact, readable, printable format called Adobe Portable Document Format (PDF). This format provides colour, graphics, fonts, hyperlinks and printing capabilities combined with the efficiency of electronic access. Through the web, anyone can access a given Wescanex '95 paper (in PDF format) as well as the free Acrobat Reader and view or print the document with any Macintosh or Windows computer.

The use of the PDF format for conference proceedings is the second major innovation and has also been incorporated into a compact disc read only memory (CD-ROM) version of the proceedings. Although not yet common, it is expected that an increasing number of conference proceedings will be offered on CD-ROMs providing the benefits of reduced storage space and printing costs as well as document searchability and navigation. As with the web, a CD-ROM-equipped computer user can access any given Wescanex '95 paper (in PDF format) as well as the free Acrobat Reader, then view or print the document on any Macintosh or Windows computer.

For more information on Wescanex '95, contact Conference Chair, Professor Witold Kinsner (e-mail kinsner@ee.umanitoba.ca or phone 474-6490). The Wescanex web site can be located through the World Wide Web at: http://www.ee.umanitoba.ca/~ferens/WESCANEX/www/index.html

Readers with access to the web are encouraged to investigate the site for more details. □

Two New Faces at APEM

By: B.A. Dobran, P.Eng.

There are two members of the APEM staff who have not previously been officially introduced in the Manitoba Professional Engineer publication. They are: Lorraine Dupas, Receptionist/Secretary, and Margaret Little, Administrative Secretary.

Lorraine has been with the Association since February of 1993, originally on a part-time basis, but since May of 1994, she has been working as the receptionist full-time.

As well as handling the front desk duties, Lorraine works with the Women in Engineering, Professional Development, Public Awareness and Publication Committees.

Lorraine hails from Glasgow, Scotland, but has lived in Winnipeg most of her life. Lorraine and her husband David have two young boys, Brian who is 12 and Eric who is nine.

Margaret started work with APEM in June of 1994, and her main involvement is with the Investigation Committee. She also works with the Enforcement, Discipline, Safety, Legislation, R&D, and Consulting Engineers Committees, as well as other Ad Hoc Committees

Margaret and her husband Brian arrived in Winnipeg about two years ago, from Ontario. She enjoys such hobbies as travel, interior decorating and gardening. □

APEM Staffers Margaret Little (left) and Lorraine Dupas.

Position Wanted

A Professional Engineer, 20 years plus managing large and small projects in civil/municipal engineering in Canada and Latino-America, want to work in international projects.

Developing contacts, business relations, negotiating terms of contracts and management of projects. Knowledgeable North/South American approach to business relations. Bilingual, Spanish/English. Please leave message for Gaston at 261-1373 or pager 931-9885. □

University of Manitoba Geological Engineering Program "Shelved" Indefinitely

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

On June 12, 1995, the University of Manitoba's Engineering Faculty Council made an extremely difficult decision: effective immediately, no more students will be admitted into the faculty's geological engineering program.

The students currently in the program will be permitted to continue, and will receive geological engineering degrees, which will be accredited at least until 1997. No students will be admitted to the program, however, which has been "shelved" immediately, and indefinitely.

The reason for this decision? Dean Don Shields, who proposed the move, cited decreasing economic resources and the fact that the geological engineering program, following its 1994 evaluation, received a three-year, rather than a six-year, extension to its accreditation. According to the Dean, university funding cuts are approaching crisis proportions, and the University of Manitoba can no longer support seven engineering programs. Shields predicted that by the year 2000, the faculty will be offering only four engineering programs. He suggested that the Civil Engineering Department, which has acquired no industrial Chairs and has made no efforts to secure its financial future, may not survive the economic crisis.

Dr. Brian Stimpson, former Head of the Geological Engineering department (which amalgamated with the Civil Engineering Department two years ago), refuted vehemently the fact that sustaining the geological engineering program will cost money. He argued very convincingly that the geological engineering program is relevant to the needs of Manitoba's economy, and that enrollment is constant (12-15 students per year, which matches the number of geology graduates from the Faculty of Science), and he described the three-year accreditation as "unfortunate, unwarranted and eminently challengeable".

Shields praised Stimpson for his extraordinary efforts in attempting, albeit unsuccessfully, to obtain funding for the geological engineering program.

Faculty Council, which has the final authority to determine which programs are offered by the faculty, made this very difficult decision by secret ballot. The vote was 18 for shelving the program, 16 against. (Yes, attendance was distressfully low.)

Brian Stimpson will now commence with the development of a geotechnical option within the civil engineering program. He and the three other Geological Engineering professors will remain in, and will no doubt strengthen, the faculty's Civil Engineering department.

Note: Since this article was written, two articles in the Winnipeg Free Press have indicated that admission to the Geological Engineering program at the University of Manitoba has been extended to September 18, 1995. □

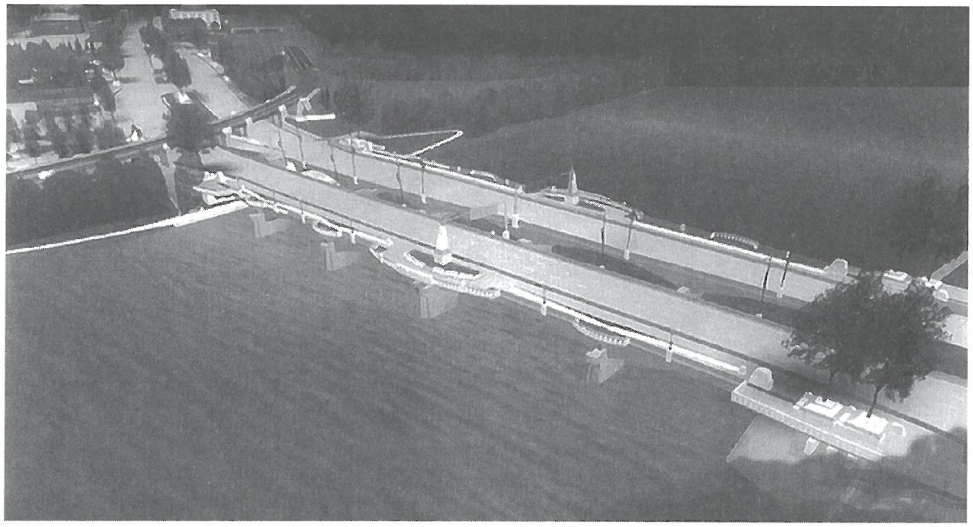
Main Street and Norwood Bridges Project

Continued from page 1

lanes and provide for an additional turning lane onto westbound Assiniboine Avenue. Considerable effort has been made with the span arrangement to improve and open up the view from The Forks site. Aesthetically, there was a major undertaking to have the new structure complement the riverwalk theme, and to include landscaping, overlooks, planters, street lighting and special accent lighting. Several open houses have been held to seek public opinions related to these issues, and to discuss safety for cyclists as well as provision for a transit lane. As with the Norwood Bridge, navigational clearances have been improved, and protection for a 300-year flood has been provided. Extra effort was required during abutment design to address riverbank stability concerns. Alternative designs were prepared for concrete and steel trapezoidal girders. Tenders for the project closed in early July. Construction is expected to begin in August 1995 and to be complete by the end of October 1996.

The northbound Norwood Bridge is a 167-metre, five-continuous-span, cast-in-place concrete, box-girder structure. Unique structural features of the bridge are that the bearings can be inspected from within the box-girder frame, and that the width varies from 20 metres at the south end to 31 metres at the north end to accommodate the two left-turning lanes at Mayfair Ave. Aesthetically, the bridge is a low-profile arch-shaped bridge in keeping with a traditional "European" theme that can be seen in old St. Boniface architecture. The bridge will include four traffic lanes, a recreation corridor, lookouts, benches, planters, accent lighting, and riverwalk access to compliment the Forks site. Streetscaping will be consistent with the larger historic precinct being developed between the Legislative Grounds and extending along the Assiniboine Riverwalks to the National Historic site. As well, a minimum 6.6-metre navigation channel and minimum flood protection for a 160-year flood are required. Flood protection at the north end of the bridge (which is lower than the 160-year flood level) is achieved with a solid limestone panel railing designed to withstand river flooding. The central portion of the bridge spans are expected to be built using a large arch-shaped floatable form that will be barged down the river. Construction of the bridge is expected to be completed by December 1996.

An existing wastewater pumping station and a flood pumping station obstruct the new roadway layout. Furthermore, studies indicate the flood pumping requirements for the Colony/River Sewer Districts at about 46 cfs and 30 cfs. The proposed Mayfair Pumping Station will combine flood-water and wastewater pumping, and the existing pumping stations will be demolished. During wet weather, flows from the combined sewer and surface drainage, in excess of the total station capacity, will overflow into the wastewater wet well where it will proceed on to the North End Treatment Plant. The substructure is about 11 m below grade. It will require complicated construction methods, as much of the substructure construction is below the water table and it is anticipated de-watering the site is not feasible. In addition, a 1350-mm-diameter combined sewer line to connect the existing brick sewer to the pump station will be tunnelled in poor geotechnical conditions. Because of the close proximity to residences and businesses, odour control is of prime concern. At present, odour control methods are being studied. Construction is expected to start in July, 1995 and be completed by April, 1996. □



New Norwood Bridge.

Council Reports

Tuesday, May 9, 1995

By: B.A. Dobran, P.Eng.

AT WHICH COUNCIL CONSIDERS THE POTENTIAL DEMISE OF THE GEOLOGICAL ENGINEERING PROGRAM AT THE UNIVERSITY OF MANITOBA

The meeting of Council commenced promptly at 12:30 p.m. By 2:00 p.m., all the Councillors were present, except one. Because of this near-perfect attendance, it was decided that it would be a good opportunity to take a photograph of the 1994-95 Council.

After Council approved the March 1995 Financial Statements, it considered a report from the Registration Board on applications approved on April 26, 1995. It was decided that those candidates who submitted applications before the deadline for "grandfathering" under the two-year engineering experience requirement and who have not submitted all required documents and successfully completed the professional practice test by June 30,1995, be thereafter considered under the four-year requirement. Council then received the Registration Board Report.

Council proceeded to ratify the actions contained in the Executive Committee meeting minutes of April 26, 1995. In the Business Arising out of those minutes, Council considered documents written by Professor Brian Stimpson and Dean Don Shields on the future of Geological Engineering at the University of Manitoba. Council agreed that the Association does not have the authority to make representation on the matter.

It was noted that industry should be aware that the Geological Engineering Program is at risk. Councillor Stewart, a metallurgist with INCO, advised that she would contact INCO and HBM&S in this regard.

Moving on to further business, it was decided that Council concur with the Registration Board's recommendation that applicants for Transfer and Temporary Licensure be required to demonstrate four years' acceptable engineering work experience, as specified in the Experience Review Board Manual and the Engineering Profession Act.

Doug Kramble, Chair of the Professional Development Committee, presented the P.D. Committee's beliefs regarding the mandatory reporting of professional development. Council decided to accept the recommendation of the P.D. Committee and to ask the Committee to provide a proposal on the policies and processes to be followed in the implementation of the program, in time for the September Council meeting. □

Tuesday, June 13, 1995

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

AT WHICH COUNCIL LOOKS INSIDE AND OUTSIDE

The meeting opened with President Don Osman, Vice-President Cathy Stewart, Councillors Arnold Permut, Ron Britton, Doug Chapman and Lay Councillors Ertrice Eddy and Bonnie Thomson present. Councillor Stu Ursel joined slightly later to provide the necessary quorum with Councillor Peter Washchyshyn bolstering the ranks for the rest of the meeting.

Discontinuation of the Geological Engineering Program

It was reported that the Geological Engineering Program at the University of Manitoba would be suspended indefinitely, with students now in the program being able to finish and receive their degrees. It was also noted that the lateness of the decision placed those students who had been considering the program at considerable disadvantage when it came to seeking out other programs or universities.

Law Reform Commission

There had been a recent meeting with J. A. Schnoor, Executive Director of the Law Reform Commission, following the submission of a position paper by the APEM and the release of the report of the Commission. An entirely new approach to regulation of the profession appears to be under consideration. The discrete tasks associated with an occupation would be regulated rather than the profession itself. In discussing the trends advocated by the Report, Councillors agreed that a pro-active approach to preparing for the anticipated changes was needed.

Investigation Committee Reports

It was agreed that in those instances where there are infractions and resulting fines, the Investigation Committee should prepare practice notes for publication in the MPE in order that other members may be made aware of the nature of the infractions. Other Associations are advising their memberships through their publications of such investigations and the results thereof.

Mandatory Reporting of Continuing Education

Council agreed that the Professional Development Committee should continue to push forward with the initiative on mandatory reporting of professional development activities by all members. It will require an amendment to the By-laws. While it is acknowledged that the concept will likely meet with some opposition, and will require extensive promotion, it was seen as one of the aspects of the regulation of the profession which may be very much part of any new regulations as proposed by the Law Reform Commission, that is, an emphasis on competency and authorization to carry out a discrete task.

Visioning

Pat Feschuk, APEM's CCPE representative, reviewed the visioning exercise which took place at the recent national CCPE meeting in Winnipeg. In examining the paradigms and core values of engineering, a number of shifts were identified. To mention but a few, the courses as presented today at universities may be greatly reduced as future courses are given by satellite from other universities; regulation of the profession will change, with more emphasis on continued competency; and the European model for registration, which is based on certification rather than licensing, will probably gain more significance. Indications are that, in Canada, there will be more emphasis on the total Canadian model of the profession rather than a provincial model. It is inevitable that there will be many new learning experiences for all of those involved in the regulation of the profession.

The meeting adjourned at 4:30 p.m. □

Internet Volunteers Sought

By: R. Bernhardt, P.Eng.

On May 4, members of the Public Awareness Committee attended an extremely interesting and informative presentation on the Internet World Wide Web given by Professor D. Blight of the University of Manitoba Department of Electrical and Computer Engineering. Following this presentation, the Committee began to explore the possibility of creating a Webpage on the Internet featuring information about APEM and engineering, with links to related information at the University of Manitoba, the Department of Education, and engineering organizations, associations and firms. This meshes with other APEM initiatives designed to get the Association up to speed on the Information Highway.

As part of this exploration, the Committee is seeking the help of individual engineers and engineering firms with access to the Internet. We would like to hear from potential volunteers who may be interested in maintaining the Webpage following its creation. In addition, we would like to hear from engineers and engineering firms who have created their own Webpages featuring information about their products and services, and other engineering-related subject matter. These pages could be linked into the APEM Webpage.

For further information, please contact Richard Bernhardt, P.Eng. at 255-2745. □

1995 APEM Golf Tournament

By: N. Scott, EIT

Another of the annual APEM golf tournaments is complete and the day could not have been more perfect. The Falcon Lake course was beautiful and the temperature was a very warm 34 degrees. The sun was shining, the breeze was warm and the mosquitoes went unnoticed.

The big event was sold out quickly, with 120 golfers participating. The same as last year, the tournament took on the "Texas Scramble Best Ball" format, allowing teams to strategically plan their games and highlight each individual's strengths. In addition, various holes throughout the course were classified as "mystery holes" (and to a lot of people in the tournament those holes are still probably a mystery!) These holes were very popular, as people actually won prizes for hitting the ball into the water, over a fence, etc. – a great twist to the tournament that should stay for years to come!

The "longest drive" contest at the 10th hole, sponsored by Engineered Golf, gave players an opportunity to test the "cadillac" of drivers with the winner taking home the lucky stick! The putting greens at the end of the 18th hole offered an extra challenge with the "Kid Sport Fund Children's Charity" putting contest. Golfers tested their putting abilities and had a chance at winning an authentic APEM golf bag. The day ended with a steak dinner, barbecued to perfection, and trophies and prizes for all the participants.

The "battle of bestball" was intense, the competition fierce (nothing less expected at an APEM tournament!), and two teams ended their rounds at six under par. A countback was required to determine our 1995 champions! The Landon Cup was presented to Rob McBain, Brad McCormac, Rob Sachowski, and Randy Kastalanych. The second-place team consisted of John Duncan, Tim Kirkham, Tom Crilly, and Eric Matthies. These guys are rookies to the tournament and will be a prominent force in years to come!

Prizes were awarded to everyone who participated, regardless of whether the team was double digits over par! A very special thanks to the companies sponsoring holes and contests: UMA Engineering Ltd., PCL Constuctors Prairie Inc., Pro-Tek Coating Ltd., Wardrop Engineering Ltd., DS-Lea Consultants Ltd., Manitoba Telephone System, Delcan Western Ltd., Hydropipe Systems, Reid Crowther & Partners Ltd., National Testing Laboratories, Agra Earth & Environmental Ltd., M.M. Dillon Ltd., Specialty Construction Products Ltd., Armtec Construction Products, Smith Carter Architects and Engineers Ltd., Scouten Mitchell Sigurdson & Associates Ltd., KGS Group, Geokwan Engineering Ltd., Pydee Engineering Co. Ltd., Lewis Instruments Ltd., Acres International Ltd., Superior Envelope, Engineered Golf, and Investors Group.

Hope to see everyone next year. Keep swinging! □

Elementary School Students Experience Taste of Engineering

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

Do you know how traffic signals work? Eighty-eight students and 11 teachers in the Fort Garry School Division do, thanks to Leslie Wurtak and her annual Engineering Awareness project!

One afternoon in May, eight grade four, five and six students and one teacher from each of the eleven elementary schools in the Fort Garry School Division visited the Faculty of Engineering at the University of Manitoba for an afternoon of engineering awareness raising.

Hosted by the Dean and his staff, the program comprised essentially four "workshops": a civil/geological engineering spaghetti-bridge-building contest; a chemical engineering experimentation with acids, bases and liquid nitrogen; a mechanical engineering competition to see who could carve the most aerodynamically-efficient car from a styrofoam brick; and a computer/electrical engineering creation of a human computer to simulate the digital logic involved in the operation of traffic control signals.

This year, for the first time, Mini-U and Women in Science and Engineering Access Program staff facilitated the workshops. (In the past, Faculty of Engineering staff had organized and executed the engineering component of the program.) Clearly, the students all enjoyed themselves immensely, learned some of the principles fundamental to engineering, and learned a little about what engineers do. Their teachers, too, gained a better appreciation for, and understanding of, the engineering profession.

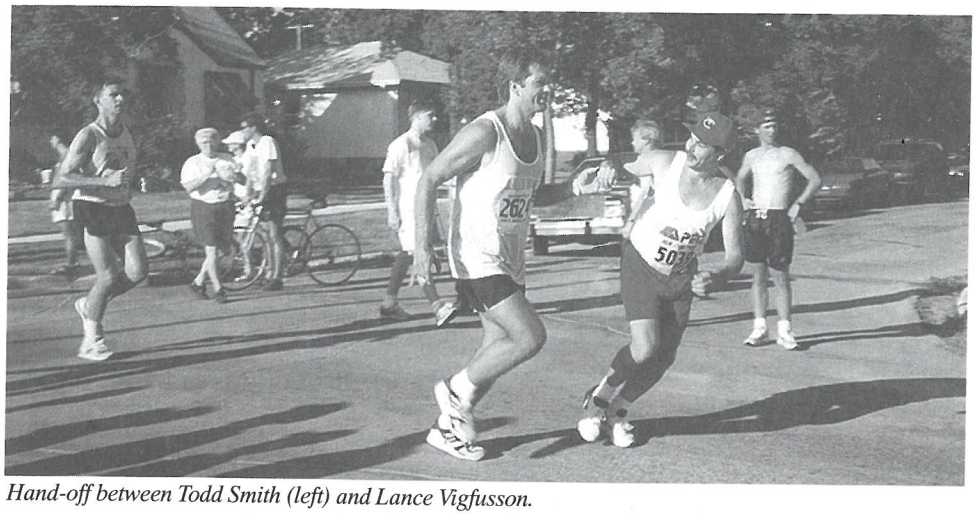
Leslie Wurtak is the Fort Garry School Division's Co-ordinator of Elementary Programs. It was Leslie who conceived the idea of an Engineering Awareness Project, who developed the program, and who evolved it over the years to what it is today.

APEM's Public Awareness Committee has helped sponsor this event for the past four years. □

Mini-U staffer tests students' styrofoam cars with wind tunnel.

Manitoba Marathon '95 Relay Results

By: M.D. Vanderpont, P.Eng.



Hand-off between Todd Smith (left) and Lance Vigfusson.

The hot item on this year's Manitoba Marathon was the heat. Man, it was hot! Three teams of engineers represented our profession and ran in spite of the heat. Well, mostly.

APEM's power dream team was 5th in the Corporate Male category and 12th overall out of 276 teams with a time of three hours, ten minutes. Congratulations, guys! That is an excellent result. The dream team was lead by Todd "Scooter" Smith of Reid Crowther who ran the first leg of the relay and then completed the half marathon in one hour and forty-five minutes. The second runner was "Leaping" Lance Vigfusson of the Department of Highways. Runner number three was Alan "The Arrow" Aftanas of Wardrop Engineering. Number four was Bob "Thunderbird" Partridge of New Flyer. "Darting" Dave Whitmore of Vector Construction ran cleanup.

Our second team's performance could be called something of a SNAFU (situation normal, all ***** up). I, as the second runner, failed to find our lead-off guy, Mike "Iron Man" DeWiele from Conviron, as he passed through the exchange point. Fortunately, Iron Mike was running the full marathon so he simply continued on to the second exchange point where "Roving" Rick Shand, also of Conviron, took over. Unfortunately for Iron Mike, at about mile 18, medical personnel asked to have a word with him. Next thing he knew, Mike was lying in an ambulance with the first of three litres of saline running into his arm. Iron Man Mike's comment, "S*** happens". "Jack Rabbit" Jim Bailie ran fourth for the team. Steve "Cannonball" Crockett of Kor Product Design brought them home at a very respectable three hours, thirty-five minutes, or seventy-third overall. Well done team #2. I hope I can join you next year.

Team #3's day may be summed up as FUBAR (***** up beyond all repair). They started out great with Jim "Transporter" Terris of UMA leading off and continuing on through the half marathon. (By the way Jim, you owe me $20 for the track top!) "Turbo" Tom Price of UGG took the second leg. The heat d*** near claimed him but Turbo toughed it out. "Hot Rod" Harry Lobo of APEM, a last-minute replacement for Dave "Tangle-Foot" Ennis (APEM), ran third. (Sorry to hear about that training accident, Dave. Let's get you back next year, big guy!) It just kept getting hotter. Tim "Tracker" Starodub of UMA ran fourth in 35º C heat. The day really went off the rails for the last runner, Bill "Panther" Penny of Western Reman. At 11:00, course officials told him that the race was over and to turn in his tag. Bill did so, then decided to continue his run to the stadium finish line. There, it really got confusing. Anyway, the Panther reports that team #3's time was four hours, fifteen minutes. That's a long, tough run. You should all be proud of your grit and determination to finish.

I see that Crosier Kilgour entered a team which placed seventy-first, edging our Professional Engineering #2 by seventeen seconds. Well done, CKP Force. (By the way Malkiewicz, why wouldn't you run on any of my teams back in our UMA days?)

Thank you, everyone, for participating. The marathon is held to support the Manitoba Society for Community Living, which helps Manitobans living with mental handicaps. Special recognition to Tom "Turbo" Price who wrangled several hundred dollars in pledges from his fishing buddies.

We'll do it again next year. Anyone interested in finding out more about the Manitoba Marathon or other activities of the APEM Sports Committee is encouraged to call me at 453-4903. □

Publication Committee Notice

If you are an EIT or know of an EIT who is interested in becoming involved in the Publication Committee, we would like to hear from you. Involvement in the Publication Committee can be used as professional service points. For more information please contact the Chairperson Jerry Bogan at 943-3178.

Notices Under the Discipline By-Law

This is Notice that on 16 June 1995, A.J. Pankratz, P.Eng. was suspended from membership for 30 days commencing on 17 June 1995, and fined $2,000.00 following a conviction on a charge of unprofessional conduct and negligence, in accordance with Section 43.4.8(e) of the By-Laws of the Association of Professional Engineers of the Province of Manitoba. It was also strongly recommended that Mr. Pankratz voluntarily enroll in the Professional Practice Seminar and pass the associated Examination sponsored by the Association of Professional Engineers of the Province of Manitoba, within twelve months of the date of conviction.

The conviction is based upon his failure to employ the appropriate skill and knowledge when undertaking to satisfy the engineering needs of his clients in a professional manner while engaged to prepare and seal engineering documents in support of Development Applications for proposed paint and spray facilities. In so doing, he failed to make responsible provision to comply with the applicable statutes, regulations, standards, codes and/or by-laws.

Publication of this Notice is made under the discretionary authority provided in the Association's Discipline By-Law.

D.A. Ennis, P.Eng., Registrar

This is notice that on 15 May, 1995, P.A.A.R. Beach, P.Eng. was reprimanded and fined $1,500.00 following a conviction on a charge of unprofessional conduct and negligence, in accordance with Section 43.4.8(e) of the By-Laws of the Association of Professional Engineers of the Province of Manitoba. It was also strongly recommended that Mr. Beach voluntarily enroll in, and pass the Professional Practice Seminar and Examination sponsored by the Association of Professional Engineers of the Province of Manitoba, within 12 months of the date of the conviction.

The conviction is based upon his failure to take adequate care to ensure that the repair and renovation of a residential building foundation, utilizing preserved wood construction, was carried out in compliance with the drawing and specifications prepared and sealed by him and in compliance with the requirements of the applicable sections of the relevant building codes and regulations.

Publication of this Notice is made under the discretionary authority provided in the Association's Discipline By-Law.

D.A. Ennis, P.Eng., Registrar

Women in Engineering – More Than Just Numbers – An Update

By: S.M. Matile, P.Eng. & C.S. Roberts, P.Eng.

In May, we had the pleasure of attending the national follow-up conference to the "More Than Just Numbers" Conference that was held in 1992.

For those members who are not familiar with the 1992 "More Than Just Numbers" conference, it was the first conference of the Canadian Committee of Women In Engineering, where, UNB-NSERC Women in Engineering Research Chair Monique Frize presented the findings of her 1991 cross-Canada forums at which Canadian engineers, educators, employers and politicians had presented papers and research on issues facing women in engineering. Those who attended the 1992 conference had collectively prepared the recommendations for action that were subsequently published in the 1992 "More Than Just Numbers" report. At the Update Conference in May, it was time for the "stakeholders" – the groups at which the recommendations had been "targeted" – to provide progress reports.

Many of the reports were presented in a voluminous manual which was distributed at the conference. In addition, oral reports were received from the Canadian Federation of Engineering Students (CFES), the National Committee of Deans of Engineering and Applied Science (NCDEAS), the Association of Universities and Colleges of Canada (AUCC), the Canadian Manufacturing Association (CMA), and the Association of Consulting Engineers of Canada (ACEC).

Several presentations designed to inform, provoke thought and inspire the participants were made throughout the two-day conference.

We have no intention of boring you with all the details of the reports, here. Highlights for us, however, were:

- the accomplishments of the engineering students across Canada in improving their images, in their outreach programs promoting engineering to children and in their charitable work;
- the significant increases in the numbers of women engineering undergraduate and graduate students;
- the amazing impact the Canada Scholarships, which were recent casualties of Federal Government budget cuts, had on the enrollment of women in university engineering programs (38% increase in enrollment of women in engineering versus 14% in other faculties);
- the fact that 14 of 65 assistant professors hired by Canadian engineering faculties this year were women;
- the initiatives taken by a number of large corporations; and
- the disappointing absence of any action on the part of the consulting engineering community.

Several presentations designed to inform, provoke thought and inspire the participants were made throughout the two-day conference. Speakers included Gary Donahee, a President of Northern Telecom; Hon. Jon Gerrard, MP for Portage-Interlake Manitoba and Secretary of State, Science, Research and Development; and Dr. Ursula Franklin, Metallurgy Professor Emerita, University of Toronto, and a wonderful role model for women engineers.

The results of PEO's Women in Engineering Advisory Committee's workplace survey were presented. All of the female members of the participating Associations, and twice that number of randomly-selected male members, were canvassed for their views and perceptions of issues regarding women in engineering. Nine of the twelve Associations participated, and there was a 31% response – 39% of the females, and 26% of the males.

The majority of respondents, we were informed, believe that sexual harassment should be explicitly included in Associations' Codes of Ethics; that school outreach is an important area on which to focus; and that engineering is a more socially acceptable career for men than women – although 75% of the women respondents are satisfied with their jobs, and 80% with their careers. APEM should be receiving a copy of the report on the survey, shortly. If you would like a copy, please let us know. Results will be presented at the October Annual General Meeting.

Much of the conference comprised working discussions of progress made since 1992, and the recommendation of strategies for future implementation. The delegates spent most of their time in discussion groups, identifying issues for five-year action plans for public schools, universities, associations and workplaces. These action plans will form the basis of Dr. Frize's next report which, we were promised, will be published soon! Look for a summary of the recommendations in an upcoming issue of the MPE. □

University News

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

There are some interesting developments taking place within the Faculty of Engineering at the University of Manitoba.

"Agricultural Engineering" will become "Biosystems Engineering", commencing in 1996 (although graduates of the program will receive degrees in "Agricultural Engineering" until 1998). A co-op program is currently being proposed for this department.

Glenn Morris is chairing a committee looking into the physical building requirements of the engineering department. Distance education and multi-media classrooms with workstations are currently being considered for what will obviously be a very long-term project; and renovation of the existing buildings, rather than reconstruction, now appears to be the order of the day.

Ron Britton's Ad-Hoc Curriculum Committee has prepared its final report on its "one plus four" proposal- and it looks as if implementation of this proposal, which will see admission to the Faculty of Engineering based on performance in eight single-term university-level courses, may take place as early as the fall of 1996.

Revisions to the composition and operation of the Council of the Faculty of Engineering have been proposed. Among the proposed revisions is the creation of a Board of Examiners (with APEM representation), to ensure consistency of treatment of graduands.

In response to the Dean's proposal to "shelve" the Geological Engineering program, a program review committee (also with APEM representation) is being established to undertake studies into the quality, integrity and sustainability of any of the Faculty's engineering programs.

Engap, the access program for aboriginal engineering students, has accepted seven of eight applications for the fall of 1995. There are currently 43 Engap students in the Faculty, 28 of whom are in the first-year program. Four Engap students – three of them women – graduated this year, bringing the total of 13 graduates to date.

Sami Rizkalla is leaving the University of Manitoba to become head of the Civil Engineering Department at Concordia University. The engineering community in Manitoba will miss you, Sami, and we wish you every success with this new challenge.

Finally, congratulations to Professors Mahesh Chaturvedi, Greg Bridges and Doug Thompson, who have received major NSERC equipment grants; to Professor Grant Sims, who was recently named a Fellow of the Canadian Society of Mechanical Engineers (CSME); to Professor Scott Ormiston, who received the university's Olive Beatrice Stanton Award for classroom excellence; and to Professor Ron Britton, who received the university's Dr. & Mrs. Ralph Campbell Outreach Award for his community service/involvement. □

Engineers In the News

Madhav Sinha, P.Eng., who works for the Manitoba Labour department in Winnipeg and is an internationally recognized Canadian expert in Total Quality Management (TQM), recently became the first Canadian to win the American Society for Quality Control's Eugene L. Grant award.

Sinha has won more than a dozen national and international awards for quality management leadership. □

Coming Events

Winnipeg will host the **7th International Winter Cities Conference** from February 9-13, 1996.

Through international keynote speakers, panel discussions, workshops, and interactive technology, you are invited to participate in one or all of our study streams:

- Communications
- Leisure and Recreation
- Remote and Northern Communities
- Shelter, Design and Environment
- Transportation and Accessibility
- Sports Medicine Symposium
- Zoo Symposium

An exciting concurrent event is the Great Northern Concrete Toboggan Race, North America's largest Civil Engineering Design Student Competition!

For more information we can be found on the internet:
Internet: http://www.Tourism.Winnipeg. MB. CA/winterct
E-Mail: WpgInfo @ Tourism. Winnipeg, MB.CA
Phone: (204) 943-1970 Fax: (204) 942-4043

Or write to Jackie MacIver, Manager, 7th International Winter Cities Winnipeg 1996 Inc., 320-25 Forks Market Road, Winnipeg, Manitoba R3C 4S8. □

"Formula One" Rock & Roll Engineering Reunion

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

Are you tired of:

- high costs for social events;
- long sit-down dinners;
- long agendas;
- long speeches;
- canned music; and
- no fun?

Then, the "Formula One" (the number is unrelated to 1995 being the first annual) Rock & Roll Engineering Reunion is for you – an event where you can have the choices you want:

- fun (complete with a bit of nostalgia);
- low cost ($10.00 per person);
- no uncomfortable dinner;
- no agenda;
- no speeches;
- the opportunity to mix and mingle in a "social" setting;
- casual dress; and
- some of the best band music in Winnipeg (the Ron Paley Band).

Plus

- The opportunity to win a 1967 (or similar aged) car.

HERE'S THE DEAL:

DATE: **Friday, September 8, 1995**
TIME: **8:00 p.m. - 1:30 a.m.**
PLACE: **Le Rendez-Vous – 768 Tache Avenue**
COST: **$10.00 (value priced)**

TICKETS FROM:

Sean Quigley – Wardrop
Mike Saxton – Manitoba Hydro
Roy Houston – KGS
Bill Borlase – City of Winnipeg
Guy Cooper – Manitoba Department of Highways
Gervin Greasley – Winnipeg Construction Association
Wendy or Leslie – Manitoba Heavy Construction Association
Dave Ennis – APEM Office □