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engenuity

The Source of Engineering and Geoscience News in New Brunswick
La source d'information en ingénierie et géoscience du Nouveau-Brunswick

Canadian military engineers are playing a crucial role in the deadly job of clearing landmines in Afghanistan. New technology such as the Improved Landmine Detection System is helping to minimize the risk to both soldiers and civilians. Read more about the life-saving operations on [page 22](#).

Postcard from Kabul



Brian Barnes, P.Eng., was elected President of the Association during the 84th Annual Meeting. See what else happened on [page 11](#).

The new Moncton YMCA will open its doors this fall. Learn how APEGNB members are contributing to the project on [page 26](#).



2004 Annual Meeting



APEGNB members lend expertise to the new Moncton YMCA

Association of Professional Engineers and Geoscientists of New Brunswick
Association des ingénieurs et géoscientifiques du Nouveau-Brunswick



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Northeastern Councillors	Claude Mallet, P.Eng. Kevin Gallant, P.Eng.
Northwestern Councillors	Eric Ouellette, P.Eng. Marcel Lizotte, P.Eng.
Geoscientist Councillors	Bruce Broster, P.Geo. David Lentz, P.Geo.
Lay Councillors	Nicola Carter Hélène Beaulieu, LLB

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*No purchase necessary. The contest is open to residents of Canada who have reached the age of majority where they reside. The approximate value of the new Mercedes-Benz CLK320 Cabriolet is \$74,000. The contest runs from January 1st to December 31, 2004. In order to win, the entrant, selected at random, must correctly answer a mathematical skill-testing question. For the odds of winning and to learn how to participate, see the complete rules of the *Win the new Mercedes-Benz CLK320 Cabriolet* Contest at www.melochemonnex.com/apenb.

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February delivered some ferocious weather for Maritimers but that didn't stop people from attending APEGNB's 84th Annual Meeting hosted by the Northwestern Branch. Despite blizzard conditions in southern New Brunswick, delegates braved the roads to enjoy a weekend in sunny Edmundston on February 20 and 21.

The Annual Meeting was certainly a memorable one for me. In addition to being elected your president for 2004-05, I was pleased to meet with friends, listen to members' concerns and attend an engaging line-up of technical sessions. Congratulations to **Mireille Vautour**, P.Eng., and her capable committee for their hard work, *joie de vivre* and attention to detail!

With plenty of work to do on behalf of the Association, I look forward to serving on Council with your new vice-president, **Brent Smith**, P.Eng., and I welcome returning Council members as well as the following newly elected Councillors:

- **Jane McGinn**, P.Eng.
(Fredericton Councillor)
- **Kevin Gallant**, P.Eng.
(Northeastern Councillor)

- **David Lentz**, P.Geo.
(Geoscientist-At-Large)
- **Marcel Lizotte**, P.Eng.
(Northwestern Councillor)

Hélène Beaulieu, LLB, is our new Lay Councillor. She brings a depth of experience dealing with insurance-related matters and will no doubt offer some unique perspectives on issues affecting our professions.

A sincere thank you to our outgoing Councillors is also in order: **Al Giberson**, P.Eng.; **Kevin Richard**, P.Eng.; **Tony Desjardins**, P.Eng.; **Robin Turner**, P.Geo.; and **Susan Mesheau**. Their dedication and expertise has been very much appreciated. I hope they will continue to play a significant role in shaping the future of our Association.

By-Law Changes

In December 2003, you received notification of proposed by-law changes. I am pleased to report that during the Annual Meeting, the members in attendance voted to send the proposed by-law amendments, that would grant engineers- and geoscientists-in-training the right to vote and hold office, to letter ballot. You will receive your ballots by mail in April. Please

take the time to make your voice heard on this issue.

A proposed by-law amendment concerning the definition of "retired member" was presented to the meeting, discussed and tabled until next year.

APEGNB Office Space

During the Annual Meeting, APEGNB vice-president, **Brent Smith**, presented a proposal to build new office space for the Association in order to meet our ever-increasing storage and administrative needs. The members decided that the Association would renew its lease at 535 Beaverbrook Court for another 18 months. In the meantime, the Association will search for suitable commercial property and develop a detailed plan, which will include a comparative financial analysis and a recommended course of action. The final proposal will be presented to the membership at a special meeting or during the 2005 Annual Meeting. If you know of any available commercial property in the Fredericton area that would be suitable for a professional office building, please contact our executive director, **Andrew McLeod** (mcleod@apegnb.com).

Volunteer!

On a final note, I encourage all of our members to actively participate in the governance of our Association. There are plenty of ways for you to get involved! Attend your Branch-sponsored events. Volunteer to run for Council at the Branch level. Become a member of any of the Association's provincial committees. (For a complete listing of the various APEGNB committees, visit www.apegnb.com/people/committee.html). However you choose to participate, you can be assured that your expertise will be greatly appreciated and your volunteer work will be a most rewarding and fulfilling experience.

I look forward to working with all of you this year and invite you to e-mail me (lbbarnes@nbnet.nb.ca) with any comments and suggestions you may have regarding Association-related matters. ☺

APEGNB Foundation for Education

Advanced Studies Scholarship 2004

Field of Study:

Engineering or Geoscience: Full-time or part-time for the equivalent of one academic term.

Conditions:

Must be a registered professional member (P.Eng./P.Geo.) in good standing with APEGNB.

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Application Closing Date:

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For further information or to apply, contact the APEGNB office.

Tel: 506-458-8083
rachael@apegnb.com





En février, Dame Nature n'a pas épargné les provinces maritimes, mais ces conditions inclementes n'ont tout de même pas empêché nos membres de se rendre à la 84^e réunion annuelle de l'AIGNB organisée par le bureau du Nord-Ouest. Malgré la tempête qui sévissait dans le sud de la province, les délégués ont affronté les routes enneigées pour venir passer une fin de semaine ensoleillée à Edmunston les 20 et 21 février.

Cette réunion annuelle restera des plus mémorables pour moi. Outre mon élection à la présidence pour 2004-2005, j'ai pu renouer avec des amis, entendre les préoccupations des membres et prendre part à une série de séances de travail techniques très intéressantes. Toutes mes félicitations à **Mireille Vautour, ing.**, et aux membres compétents de son comité pour leurs efforts, leur joie de vivre et leur attention aux moindres détails!

Avec tout le beau travail à accomplir au nom de l'Association, c'est avec grand plaisir que j'anticipe ma collaboration avec votre nouveau vice-président, **Brent Smith, ing.**, et que j'accueille les membres qui sont de retour pour un autre mandat et les conseillers nouvellement élus :

- **Jane McGinn, ing.** (conseillère de Fredericton)
- **Kevin Gallant, ing.** (conseiller du Nord-Est)
- **David Lentz, géosc.** (représentant provincial des géoscientifiques)
- **Marcel Lizotte, ing.** (conseiller du Nord-Ouest)

Hélène Beaulieu, LL.B., est notre nouvelle conseillère non-spécialiste. Elle possède une connaissance approfondie des questions liées aux opérations d'assurances et saura sûrement nous présenter un point de vue unique sur des dossiers touchant nos professions.

Je tiens également à remercier tous les conseillers sortants : **Al Giberson, ing.**; **Kevin Richard, ing.**; **Tony Desjardins, ing.**; **Robin Turner, géosc.**; et **Susan**

Mesheau. Nous leur sommes très reconnaissants pour leur dévouement et leur expertise. Et j'espère qu'ils vont continuer de contribuer, grâce à leur influence, au progrès de notre Association.

Changements aux règlements

En décembre 2003, on vous a avisé des changements proposés aux règlements. Il me fait plaisir de vous informer qu'à la réunion annuelle, les membres présents ont décidé par vote de soumettre à un scrutin postal les changements proposés aux règlements, qui concéderaient aux ingénieurs et géoscientifiques stagiaires le droit de voter et d'être nommé pour un mandat. Vous recevrez votre bulletin de vote en avril. Veuillez donc faire connaître votre opinion à ce sujet.

À la réunion, un changement proposé au règlement portant sur la définition du « membre à la retraite » a été soumis, discuté puis remis à l'an prochain.

Locaux de l'AIGNB

À la réunion annuelle, le vice-président de l'AIGNB, Brent Smith, a proposé la construction de nouveaux locaux pour l'Association afin de répondre aux exigences administratives et aux besoins d'entreposage qui augmentent constamment. Les membres ont décidé que l'Association allait renouveler le bail de ses locaux situés au 535, rue Beaverbrook, pour une période de dix-huit mois. Entre-temps, l'Association tentera de trouver une

propriété immobilière convenable et élaborera un plan détaillé, présentant entre autres une analyse financière comparative et le plan d'action préconisé. Le document final sera présenté aux membres à une réunion extraordinaire ou à la réunion annuelle de 2005. Tous ceux et celles au courant de propriétés immobilières disponibles à Fredericton et aménagées pour servir de bureaux sont priés de communiquer avec notre directeur exécutif, **Andrew McLeod** (mcleod@apegnb.com).

Bénévolat!

En terminant, j'invite tous nos membres à participer activement à la gouvernance de notre Association. Cette participation peut prendre différentes formes! Assister à une activité organisée par le bureau régional. Se présenter aux prochaines élections du Conseil régional. Devenir membre d'un des comités provinciaux de l'Association. (Consultez le site www.apegnb.com/people/committee.html pour obtenir la liste complète des comités de l'AIGNB.) Mais une chose est sûre : peu importe votre type de participation, votre expertise sera des plus appréciées et votre travail de bénévole deviendra une expérience des plus enrichissantes et satisfaisantes!

Je me réjouis à la perspective de collaborer avec vous tous durant l'année en cours et je vous invite à me faire parvenir par courriel (lbbarnes@nbnet.nb.ca) toute remarque ou suggestion ayant trait à l'Association. ☺

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The Fredericton Branch held its Annual Meeting and Branch Dinner on January 22 and we're pleased to report that \$500 was raised for the APEGNB Foundation for Education. Thanks to all of those who attended and to **Sherry Sparks, P.Eng.**, for her presentation on the environmental impact assessment of possible modifications to the Petitcodiac River causeway.

We have planned several program activities for early 2004 including an evening of curling, technical sessions, and outreach activities. Here are few upcoming events this spring:

- April 6 - The UNB Engineering Student Paper Competition;
- April 20 - "Constructing Camp Julien, the largest Canadian Forces' camp since the Korean War". The presentation will follow the project from inception to completion. Major **Brian Smith**, Canadian Forces multi-disciplinary design team, is the guest speaker.



The 84th APEGNB Annual Meeting has just wrapped up here in Edmundston, and I would like to thank the organizing committee, as well as the staff at the APEGNB office for all their time and energy in making this year's event a success. We hope that all those in attendance had a great time and enjoyed the local "Brayon" hospitality.

At the time of this writing, the 10th edition of our annual **Pasta Bridge Contest** is taking place at the local schools in the northwestern region. Students from

Fredericton Branch

Martin Gordon, P.Eng – Chair

THE NEW EXECUTIVE OF THE FREDERICTON BRANCH IS:

Marty Gordon, P.Eng.	Chairperson
Jeff Braun, P.Eng.	Vice-Chair
Ken Peck, P.Eng.	Co-Treasurer
Tom MacNeil, P.Eng.	Co-Treasurer
Serge Levesque, P.Eng.	Communications Chair
Trevor Hanson, EIT	Co-Program Chair
Matt Alexander, GIT	Co-Program Chair
Capt. Randy Dunn	MEAC Representative
Andy Small, P.Eng.	Past-Chair
Greg Snyder, P.Eng.	Councillor at Large
Ed Smith, P.Eng.	Councillor at Large
John Pugh, P.Eng.	Councillor at Large
Alana MacLellan Bonnell, P.Eng.	Councillor at Large

We are also looking forward to our Spring Golf Tournament which will be held in May at the Mactaquac Golf Course. This event is always a great time, and we hope to see you there.

If you have any questions about the above events or comments, please contact **Marty Gordon** at 506-452-6110 or mjg@unb.ca. If you wish to be added to

our e-mail distribution list, please send your contact information to Marty.



Northwestern Branch

Paul R. Cormier, P.Eng – Chair

grades nine to twelve must apply their ingenuity and knowledge in science to construct a bridge with only pasta and glue, while following some predetermined rules. Each bridge is then put to the test by applying loads until their work of art is shattered. The top two finishers from each school then meet to compete against each other at the regional finals. Final competition results will be published in the next edition of *Engenuity*.

Northwestern members are reminded that email is used for upcoming event notices. Members who are not currently

receiving emails from the Branch should contact any member of the executive or email us at apegnb@canada.com to be added to the list.

We look forward to seeing you at our upcoming events.





It has been a very busy year in Saint John and we are pleased to see so many members taking part in all our events. The

Christmas 'meet & greet' was held at the Barrack Green Armouries in December and a great time was had by all. As at all our events this year, a 50/50 draw was held to raise funds for the Foundation for Education.

Our annual curling night was an overwhelming success with more than 60 people demonstrating their rock throwing abilities! With so many people signed up, the organizers decided to bend the rules a little and play with five-person teams. For a little more fun, a few sheets were reserved for husbands vs. wives. Unfortunately ladies, the men were lucky that night, so congratulations to the winners, **Alan Reid**, P.Eng.; **Pierre Michaud**, EIT; **Russell Glasgow**, P.Eng.; **Rod McNutt** and **Peter Mabey**, P.Eng.

At the APEGNB Annual Meeting in Edmundston, Saint John's **Brent Smith**,

Saint John Branch

Lisa Woodworth, EIT – Chair

P.Eng., former Branch Chair, was elected Vice-President of the Association for the coming year. **Tanya Horgan**, P.Eng., and **Ken Bhola**, P.Eng. were elected as Councillors. Congratulations to Brent, Tanya and Ken and thank you for taking on this responsibility. To **Mireille Vautour**, P.Eng., and members of the Annual Meeting Committee – congratulations on a job well done!

Our **National Engineering Week Camp** at UNBSJ was home to 30 prospective engineers. The high school students were introduced to our profession through tours and a GPS exercise courtesy of Geodesy and Geomatics from UNB Fredericton. Popsicle stick bridges were built and tested as well.

Several events have been tentatively scheduled for the remainder of this year. Be sure to pencil these dates in and check the website regularly, so you don't miss out on the fun!

- **April 2004**
Coleson Cove Refurbishment Tour
- **May 2004**
Technical Lecture

- **June 2004**
Annual Branch Dinner Theatre
- **July 2004**
Golf Tournament - Rockwood Park

Branch members will be updated and reminded of all of the events using email messages and voice-mail reminders. If you are not receiving email or voice mail, and would like to be added to the list, please contact us at saintjohn@apegnb.com or call our Branch Hotline (1-877-425-5500).



La Section du Nord-Ouest

Paul R. Cormier, ing – président



La 84^{ème} assemblée annuelle de l'AIGNB vient tout juste de se terminer à Edmundston, et je tiens à remercier le comité organisateur, ainsi que le

personnel de l'AIGNB pour vos efforts afin de rendre cet événement un franc succès. Nous espérons que tous les participants se sont bien amusés et ont su profiter de l'hospitalité brayonne.

Au moment de l'écriture, la 10^{ème} édition du concours de ponts en pâtes alimentaires

a lieu dans les écoles de la région du Nord-Ouest. Les étudiant(e)s de la neuvième à la douzième années doivent faire preuve d'ingéniosité et appliquer leurs connaissances en sciences pour construire un pont avec seulement des pâtes et de la colle, tout en respectant certaines normes prédéterminées. Chaque pont est mis à l'épreuve pour établir la charge maximale portante avant que le chef-d'œuvre soit démolie. Les deux meilleurs concourant(e)s de chaque école sont par la suite invité(e)s à la finale régionale afin de compétitionner pour les grands honneurs régionaux. Les résultats de la compétition finale seront publiés dans la prochaine édition d'Engenuity.

On rappelle aux membres de la branche que les annonces d'événements à venir se font toujours par courriel. Les membres qui ne reçoivent pas de courriel de la branche devraient contacter quelqu'un de l'exécutif ou nous envoyer un courriel à apegnb@canada.com afin d'être ajouté à la liste.

Nous espérons avoir le plaisir de vous voir à nos prochaines activités.





Greetings from Moncton! Firstly, I would like to congratulate the Organizing Committee of the APEGNB Annual Meeting held in Edmundston.

Mireille Vautour, P.Eng., and the other members of the organizing committee prepared a well-balanced and organized Annual Meeting and Conference. Unfortunately, because of the weather, many of the Moncton Branch members were either late arriving or couldn't make it at all. A few brave souls ventured out in the storm and made it on time.

Activities for the Branch during the winter months included the Curling Funspiel and the Family Fun Day at Centennial Park on March 14. But by the time you read this, both events will have passed. If

Moncton Branch

Marc A. LeBlanc, P.Eng – Chair

you want to find out the dates of the upcoming activities, check out the Moncton Branch web page on APEGNB's provincial website. Reserve time now for the Moncton Branch Annual Meeting scheduled for May.

In order to promote Engineering Month, the Moncton Branch and the student chapter of the Université de Moncton planned an Egg Drop. The participants have a short preparation time for which they must construct an object capable of holding an egg during the "drop". Students and the public were invited to participate in the event.

Technical sessions were planned throughout March and April. Keep a close eye on our web page for dates and times. A

surprise speaker has been contacted for our March session but as I am writing this, nothing has been confirmed yet.

If you are not receiving email notices for upcoming Branch events, be sure to forward us your e-mail address. **Jolaine Landry, EIT**, our communication chair, will be happy to add any new members in our database.



Northeastern Branch

Ray Ritchie, P.Eng – Chair



Our new Council is eager to serve the membership of this Branch of the Association, and the Executive is listed below as follows:

CHAIR **RAY RITCHIE, P.Eng.**
(506) 622-5654 – rritchier@scei.ca

Vice-Chair **Thomas Paisley, P.Eng.**

Treasurer **Lisa Albert-Thériault, P.Eng.**

Secretary **Gerald Lavigne, P.Eng.**

Northumberland **Kirk Mullin, EIT**

Gloucester East **Dennis Gallant, P.Eng.**

Gloucester West **Gaetan Benoit, P.Eng.**

Restigouche **Eric Beattie, P.Eng.**

P.Geo. Rep **Patrick McMahon, P.Geo**

Provincial Executive Council **Claude Mallet, P.Eng.**

Provincial Executive Council **Kevin Gallant, P.Eng.**
(Communications Officer as well)

We are looking forward to an ambitious spring/summer season in our region of the province.

Our plan is to augment our traditional Lobster Supper and Golf Tournament

activities with some technical sessions and pub events this year. At publication time, we will also have inaugurated our new "Sling-A-Bean-Bag" event for National Engineering Week (Organized by **Kevin Gallant, P.Eng.**), with our premier

event in School District 16 to be held on March 13, 2004 in Miramichi.

Lisa Albert-Thériault, P.Eng., has been responsible for selection and presentation of the two Student Bursaries, which we will have the pleasure to witness at an upcoming event. **Maryline Mallet** from Shippagan (U de Moncton) and **Peter F. Cormier** from Charlo (UNB) are this year's deserving recipients.

We thank **Thomas Paisley, P.Eng.**, for heading up this year's Nominating Committee, and it is time to start looking for candidates for upcoming Provincial Council positions, so if you know of an interested candidate, please let Tom know at (506) 627-5039.

Best regards and wishes for a safe spring season.



La Section de Moncton

Marc A. LeBlanc, ing – président



Salut de Moncton! Premièrement, j'aimerais féliciter le comité organisateur du succès de la réunion annuelle de l'AIGNB qui a eu lieu à Edmundston.

Mme Mireille Vautour, ing., et les autres membres du comité organisateur ont fait un excellent travail en mettant sur pied une réunion annuelle et des conférences bien équilibrées. Malheureusement, due à une tempête, plusieurs membres de la branche de Moncton sont arrivés en retard ou qu'ils n'ont pu se rendre.

Les activités de la branche durant les mois d'hiver incluent une journée de curling

et la journée familiale au Parc du Centenaire le 14 mars. Ces deux activités auront eu lieu avant même cette publication soit distribuée. Si vous désirez plus d'information sur les activités à venir, veuillez vérifier la page web de la section de Moncton sur le site internet de l'AIGNB. Veuillez prendre note que la réunion annuelle de la section de Moncton aura lieu en Mai.

Afin de promouvoir le mois de l'Ingénierie, la branche de Moncton et le chapitre étudiant de l'Université de Moncton organisera une chute d'œuf. Les participants auront un courte période de préparation afin de construire un objet capable de tenir un œuf durant la chute. Les étudiants et le public seront invités à participer à cette activité.

Des sessions techniques sont planifiées pour les mois de mars et avril. Les dates seront affichées sur le site web aussitôt les conférenciers auront confirmé leur présence.

Si vous ne recevez pas les avertissements pour les activités de la branche par courriel, veuillez nous envoyer votre adresse de courriel. **Jolaine Landry, i.s.**, responsable de la communication, vous ajoutera à la liste des membres.



La Section du Nord-Est

Ray Ritchie, ing – président



Le nouveau comité exécutif est de nouveau au travail et très anxieux de travailler ensemble afin d'organiser les activités pour la nouvelle année. Lors de la réunion annuelle, le nouveau comité exécutif pour l'année 2003-2004 à été formé:

PRÉSIDENT **RAY RITCHIE, ing.**
(506) 622-5654 – rritch@scei.ca

Vice-président **Thomas Paisley, ing.**

Trésorière **Lisa Albert-Therriault, ing.**

Secrétaire **Gerald Lavigne, ing.**

Northumberland **Kirk Mullin, EIT**

Gloucester Est **Dennis Gallant, ing.**

Gloucester Ouest **Gaetan Benoit, ing.**

Restigouche **Eric Beattie, ing.**

P.Geo. Rep **Patrick McMahon, géo.**

Conseiller provincial **Claude Mallet, ing.**

Conseiller provincial **Kevin Gallant, ing.**
(aussi agent de communication)

pour la semaine nationale de génie. Le premier événement aura lieu le 13 mars, 2004, au district scolaire 16 à Miramichi.

Lisa Albert-Thériault, ing., en collaboration avec les Universités, a été responsable de choisir et de présenter les deux bourses d'étudiant, dont nous serons témoin à un événement prochainement. J'aimerais féliciter **Maryline Mallet** de Shippagan (U de Moncton), et **Peter F. Cormier** de Charlo (UNB), les deux récipiendaires de la bourse de l'AIGNB Section Nord-est pour cette année.

Nous aimerions remercier **Tom Paisley, ing.**, d'avoir dirigé le comité de nomination cette année. Sur cette même note, il est maintenant le temps de chercher pour de nouveaux membres voulant se présenter à la position de conseiller provinciale. Si vous êtes intéressés, veuillez SVP contacter Tom au (506) 627-5039.

Nous vous souhaitons un printemps/été agréable.

Nous attendons avec impatience la nouvelle saison printemps/été dans le Nord-est.

Notre plan cette année, est d'augmenter la participation à nos activités traditionnelles tel que le 'Tournoi de golf' et le 'Dîner aux

homards' en ajoutant des sessions techniques et des événements de "bistrot".

Au temps de cette publication, nous aurons également inauguré notre nouvel événement; "le lancer du sac d'haricot"



For most of my business career, I have strived not to be a commodity. It is a discussion I have with so many of my counterparts in the engineering community, and although we may agree, they don't want to change their old ways. And why don't they want to change?

I believe the answer is that being a commodity is easy. You don't have to work hard to be considered for engineering services; just log on to one of many websites soliciting services. You don't need to leave your office or talk to anyone to be considered for the opportunity to compete. The downside to this type of business is that the odds of winning are low and so are the profit margins.

Engineers have spent most, if not all, of their careers developing skills to be proficient at engineering. Seldom do they take public speaking classes, get papers published, and/or lecture. These three skills can differentiate one engineer from so many other engineers. At the same time, these skills can be the building blocks to help make an engineer less of a commodity and more of a specialist.

Path of Least Resistance

Engineers also tend to follow the path of least resistance by calling on architectural firms to get their work rather than call on the owners to get their work. Unfortunately, most of the competition is also pursuing the architectural community for their work. If engineers continue to pursue this resource, they need to ask themselves, "Why do architects lead and engineers follow, and how did that happen?" My answer to those two questions, "Try turning the tables and get to the client first!"

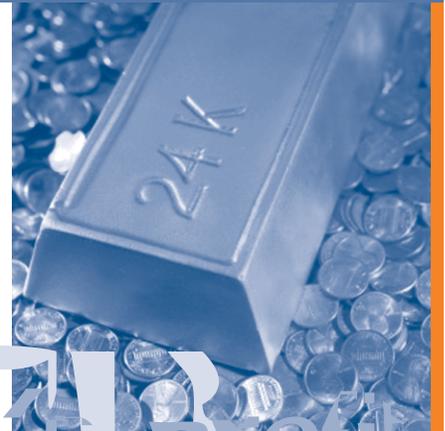
When soliciting an RFP, most will tell you that RFP means, "request for

Tomorrow's Engineer: Why Are We A Commodity?

By Howard McKew, P.E., C.P.E.

proposal." For me, RFP means "risk firm's profit." Unless the decision making process is going to be based on "best value," why would any engineer invest company earnings to pursue an RFP based on the selection process being low bid? What is the incentive to do this?

The challenge of not losing money on the job or the opportunity to "not get



risk firm's profit
For me, RFP means "risk firm's profit".

the repeat business unless you are low bid again"? Instead of taking the easy road to procuring business, really good engineers should focus on competing based on best value and not participate, endorse, or encourage low bid RFPs.

The Investment of Time

In trying not to be a commodity, do engineering firms track their closing ratio and/or how much they invested in completing a proposal? This is always an interesting exercise and very enlightening for many companies. To make the change from commodity to preferred firm, engineering companies need to focus on a business plan that strategically invests in obtaining business. The focus should be on well-qualified engineering opportunities and not giving into the easily obtained RFP document. In tracking the number of proposals, if the quantity is high and the closing ratio low, chances are the firm is in the commodity rat race. If the number of proposals is low and the closing ratio high, the firm is on target to break the mold.

The cost of competing in the commodity business is no less expensive than being selective with proposals. Submitting a bid requires participation by management, sales, administration, and/or engineer(s). Proposals will usually require a minimum of 16 hours and more likely in excess of 40 hours. Do the math and it adds up quickly. Do lots and lots of unqualified proposals and the RFP (risk firm's profit) becomes a business liability.

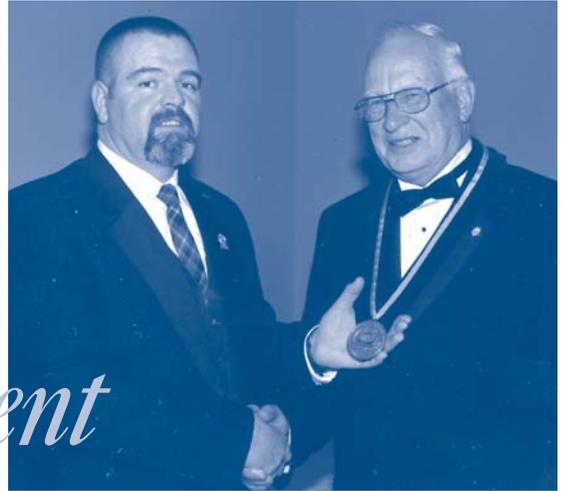
Starting in 2004, it would be nice if engineering services could only be purchased based on value and not on low price. After all, are we a commodity? 

Co-creator and test instructor of Back to Basics, and registered professional engineer and certified plant engineer, Howard McKew is Director of Building Solutions for Richard D. Kimball Company, Inc. in Andover, Massachusetts. E-mail him at hmckew@RDKEngineers.com.

Annual Meeting 2004

engenuity

Former APEGNB President, J. Allan Giberson, P.Eng., presents incoming President Brian Barnes, P.Eng., with the medal of office during the 2004 Annual Meeting held in Edmundston, February 20 and 21.

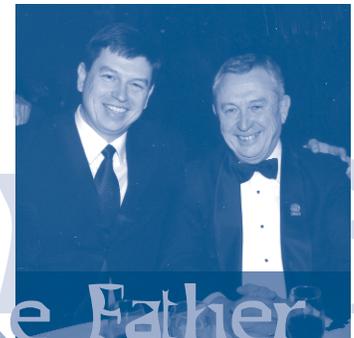


new new president

Brian Barnes, P.Eng., Elected President

APEGNB Executive and Council 2004

President	Brian B. Barnes, P.Eng.
Vice-President	Brent Smith, P.Eng.
Past President	Roger Cormier, P.Eng.
CCPE Director	Hollis Cole, P.Eng.
CCPG Director	David Keys, P.Geo.
Executive Director	Andrew McLeod
Fredericton Councillors	Eldo Hildebrand, P.Eng. Jane McGinn, P.Eng.
Saint John Councillors	Tanya Horgan, P.Eng. Ken Bhola, P.Eng.
Moncton Councillors	Larry Dionne, P.Eng. John Gallant, P.Eng.
Northwestern Councillors	Eric Ouellette, P.Eng. Marcel Lizotte, P.Eng.
Northeastern Councillors	Claude Mallet, P.Eng. Kevin Gallant, P.Eng.
Geoscientists	Bruce Broster, P.Geo. David Lentz, P.Geo.
Lay Councillors	Nicola Carter Hélène Beaulieu, LLB



Like Father
Like Son

Brent Smith, P.Eng., (left) was elected vice-president this year. His dad, Ed Smith, P.Eng., served as APEGNB president in 1996. Next year will be the first time in APEGNB history that both father and son will have served as president of this Association.



2004 Annual Meeting Committee

The energy and enthusiasm of this year's organizing committee ensured a smooth and memorable event for all in attendance. *Congratulations...félicitations!*

Standing (LtoR):

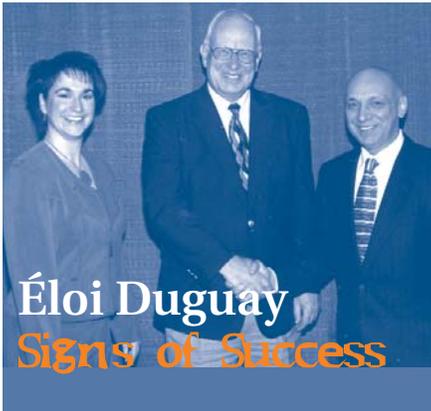
Shawn Hickey, P.Eng.; Jean Richard, P.Eng.; Louis Ruest, P.Eng.; Paul Cormier, P.Eng.

Seated (LtoR):

Georges Roy, P.Eng.; Mireille Vautour, P.Eng. (Chair); Nadine Levesque, EIT; Alain Pelletier, P.Eng.

Missing from Photo:

Georges Corriveau, P.Eng.; Mariette Savoie, EIT; Rachael Christenson, Melissa Mertz



Éloi Duguay
Signs of Success

From L to R:

Mireille Vautour, P.Eng. (Annual Meeting Chair); Brian Barnes, P.Eng. (2004 President); Éloi Duguay, P.Eng. (Friday's Keynote Speaker)

Nearly 100 people were in attendance as Pattison Sign Group president, **Éloi Duguay, P.Eng.**, discussed the evolution of sign manufacturing and shared a remarkable success story with delegates.

Pattison Signs, based in Edmundston, employs 800 people who work in nine manufacturing facilities around the world with plans to expand even further. In 2003, the awarding-winning company posted sales of \$143 million.

Pattison has used its creative talent and state-of-the-art manufacturing technology to produce signs for some of the biggest corporate brands in the world including Pepsi, Toyota, Wal-Mart, Starbucks and McDonald's.

According to Duguay, the biggest contributors to the success of Pattison Sign Group are its employees, teamwork and *kaizen*—the Japanese philosophy of continual improvement of processes and their individual elements.

"We put the customer first," says Duguay, "and that means ensuring we produce the best-quality product in the least amount of time. You can't do that without good employees, exceptional technology and a commitment to continual improvement."

From Wood Chips to Microchips— the speakers The Speakers Tell All



Guy Gaudet, P.Eng.
(McCain Foods)
"How the Potato Becomes a Chip"



John Lawless
(JD Irving)
"High-Tech Lumber Manufacturing"



Catherine Delafield
(NBCC Edmundston)
"From Wood Chips to Paper"



Jean Bérubé
(Altera Corp.)
"Microchips and Moore's Law"



Shermag Inc. (SMG), headquartered in Sherbrooke, Québec, is a leader in the production and marketing of high-quality residential furniture. The company employs almost 2,400 people and is a vertically integrated manufacturer with its own cutting rights, sawmills, veneer facility and manufacturing operations.

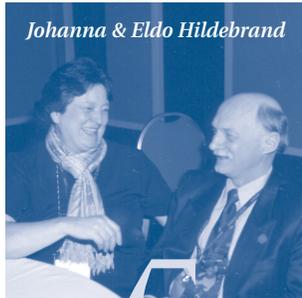


Sherry Sparks, P.Eng., (centre) and Steve Wheatley, P.Eng. (right) were two of the many delegates who took advantage of an industrial visit to Shermag, Nadeau Division, to see how the trendsetting manufacturer produces furniture.

the visit Shermag, Nadeau Division Industrial Visit

Annual Meeting 2004

engenuity



Johanna & Eldo Hildebrand

Comedian Sandy Gillis performs his one-man stand-up show as Jimmy the Janitor.



Jimmy the Janitor makes John Stevens, P.Eng., an "honorary Cape Bretoner"—much to the delight of the crowd.



comedy

Brayon Supper and Comedy Night

Hollis Cole, P.Eng., (centre) and his wife, Dianne, enjoy a few minutes of conversation with Patrick McMahon, P.Geo., before Jimmy the Janitor takes the stage.



Paul Cormier (left) and Kevin Richard (right)



partnership

Military Engineers Commemorate a History of Partnership



2004 President, Brian Barnes, P.Eng., accepts a three-volume set of the history of Military Engineers in Canada from Major Pete Peril, P.Eng., on behalf of APEGNB members.

During the presentation, Maj. Peril spoke of Canada's long and proud history of military engineering. "Nowhere are those ties strongest than here in the Maritimes," said Maj. Peril. "The first Canadian Military Engineering (CME) Unit was the 1st Brighton in Woodstock, New Brunswick. In 1997, the Canadian Forces School of Military Engineering returned to the East. In 2003, we marked a century of service and CFB Gagetown received the title, *Home Station—Home of the Engineers.*"

He concluded the presentation by saying, "APEGNB has been a friend, mentor and partner with the CME branch and this has been greatly appreciated. We thank you for your friendship and hope that the bonds between our two groups continue to grow stronger."

The 2004 C.C. Kirby Award is given in recognition of outstanding service or contribution to the engineering profession and the Province of New Brunswick. Named in honour of the distinguished engineer who was the founder of the Association and co-founder and first president of the Canadian Council of Professional Engineers, the C.C. Kirby Award is the most prestigious award a professional engineer can receive from the Association.

This year's recipient was awarded posthumously to **Ira Beattie, P.Eng.** His son, **David Beattie, P.Eng.**, (right) accepted the award on behalf of his family.



Kirby

C.C. Kirby

2004 C.C. Kirby Award



2004 Award of Merit Individual

The Award of Merit is presented to an engineer and or geoscientist who has made significant contributions in applied research, design, innovation, industrial problem-solving, construction and technology transfer. This year's recipient was **Hollis Cole, P.Eng.** (right).



OPTIMIST: The glass is half full
PESSIMIST: The glass is half empty
ENGINEER: The glass is twice as big as it needs to be

We're looking for engineers who see beyond the obvious.
If you fit into this category, please send us your resumé.

 **OSCO** construction group
P.O. Box 3187 • Saint John, NB • E2M 3S3
Attention: Human Resources
e-mail: humanresources@oceansteel.com

For information about our companies visit one of our websites:
www.oceansteel.com and www.strescon.com.

Citizenship 2004 Citizenship Awards

Citizenship Awards are given to professional engineers or geoscientists who, in the opinion of the Association, make a significant contribution to improving the quality of life in his or her community. 2004 President **Brian Barnes, PEng.**, (left) congratulates this year's award recipients.



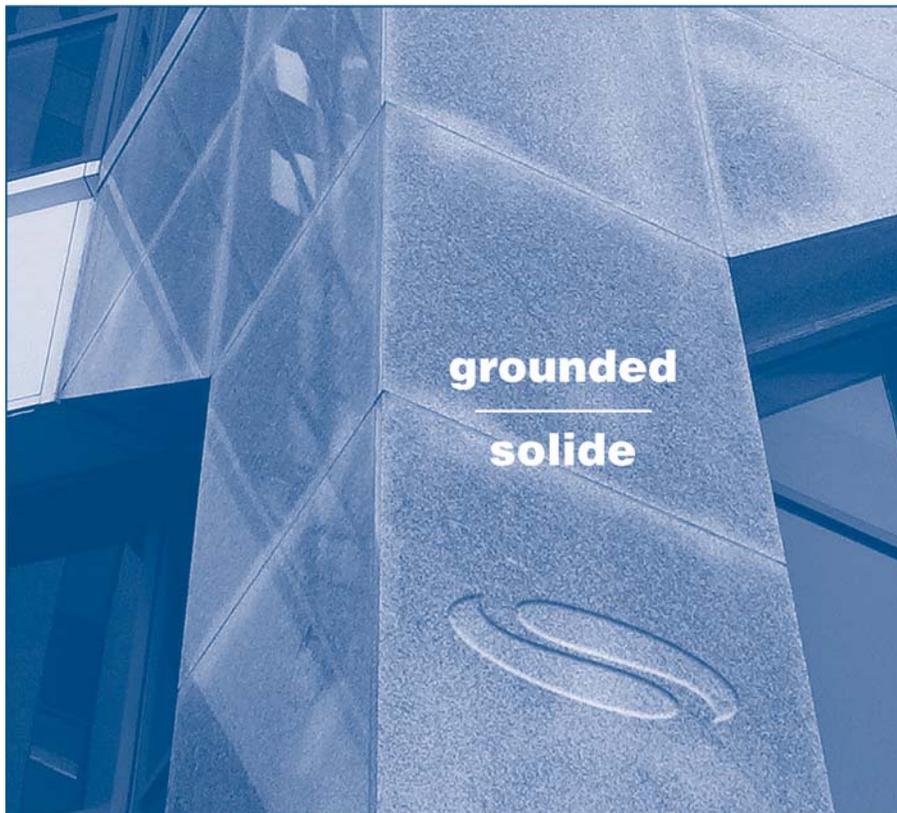
• **Andrew Steeves, PEng.**



• **Jack Veness, PEng.** (posthumously conferred). His award was accepted on behalf of the Veness family by **Frank Wilson, PEng.**



• **Jean-Jacques Roy, PEng.**



There is a lot of groundwork to do before the concrete can be poured. Stewart McKelvey Stirling Scales has the depth and the experience to help you bring your plans into being.

Un important travail de base s'impose avant la coulée du béton. Stewart McKelvey Stirling Scales a les aptitudes et l'expérience pour aider à la réalisation de vos plans.



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The National Science Board and a think tank of tech executives recently warned that the economic vitality of America is threatened by a lack of U.S. graduates in science and engineering.

Demand For Engineers Rising Fast In U.S.

By Brian Deagon, *Investors Business Daily*



"You can't retrain an engineer for a job that's moved offshore. Those jobs are gone forever," he said.

The National Science Board and the Computer Systems Policy Project have voiced concerns about the increased reliance on foreign workers and jobs moving offshore. But they are more concerned other countries are doing more to educate their work force, making them more competitive with the U.S.

Indeed, **Carly Fiorina**, CEO of Hewlett-Packard, and **Craig Barrett**, CEO of Intel, defended their use of offshore labour when the CSPP unveiled its report, "Choose to Compete," on Jan. 7. It's a natural evolution of business, they said.

The bigger issue, say the NSB and CSPP, is that America may be losing ground to foreign nations that are doing a better job of educating their youth in science and engineering. As a result, they are better able to compete against American ingenuity and innovation.

If the U.S. is to maintain its global leadership, it must ramp up its science, mathematics and engineering training, these groups say.

The National Science Board, which began its study in 2002, concludes that U.S. strength in education and innovation is threatened by two major trends. Global competition for science and engineering talent is intensifying, and

Also, the Bureau of Labor Statistics says demand for science and engineering workers will increase three times faster than all job categories this decade. Eighty-six percent of those jobs - 2.2 million - will be in the computer field.

Yet unemployment in engineering occupations rose in the third quarter of 2003, say BLS data. The unemployment rate was 6.7%, up from 6.4% in the second quarter and five times higher than it was in 2000.

George McClure, chairman of career and work force policy at the Institute of Electrical & Electronics Engineers, says there are several reasons for the disparity.

For starters, the BLS was wrong the last time it projected job demand for engineers. The BLS updates its job forecast every two years. The last time it made projections, "it was way off," said McClure. "Their crystal ball isn't much better than the rest of ours."

To be sure, these are still tough times in tech. Despite the recent increase in U.S. employment overall, the tech industry is still losing jobs - down 3.9% in November.

The good news is that the rate of job losses has been slowing since peak unemployment levels reported last

February. Also, tech jobs are being added in fields such as computer system design, which suggests firms are stepping up innovation and planning.

But McClure is not pleased. He points offshore, where firms such as IBM, Dell and Yahoo are hiring engineers by the truckload. Researchers say the cost of hiring an engineer in India is one-fifth the amount of hiring their U.S. counterpart.

Some U.S. engineers say they are having a tough time finding work because the U.S. government has let 900,000 foreign engineers work in this country since 2000. The number of visas issued is down sharply, especially since 9-11, but McClure says foreign hiring has taken its toll.

He says foreign-born engineers who have worked in the U.S. are being lured back home, where U.S. companies are now hiring.

well-being

well-trained

well-equipped

"Having a well-trained and well-equipped science and engineering work force is the basis for our economic well-being"

the number of U.S.-born graduates in these fields is likely to drop.

"There has been a steady decline in the number of U.S. graduates in these fields," said **Joseph Miller**, a member of the National Science Board and the chief technology officer at Corning Inc.

There were 295,000 U.S. graduates in science and engineering fields in 2001, down from 330,000 in 1995. Meanwhile, the number of foreign-born engineers working in the U.S. has been steadily rising.

Whereas in years past, the U.S. could rely on foreign-born engineers to fill shortfalls – such as during the tech boom – those workers might not be so available if they return home to work.

The NSB doesn't know why the U.S. is producing fewer engineering graduates. "Our students perform comparatively well in math and science up through the fourth grade," said Miller. "After that, there is a decline in interest and ability."

Even worse, he said, "When our young people enter college, they have a multitude of careers they can pursue. Science and engineering are rigorous and competitive, so many end up looking elsewhere."

The NSB, in its report, called on the federal government to direct more financial support to students and universities. For students, that would mean more scholarships and financial aid for those who study science or engineering. The group wants the federal government to help universities expand science and engineering programs.

Emerging fields such as biomedicine and nanotechnology are future drivers of the American economy, just as computers and networking were in the '90s, says Miller.

"Having a well-trained and well-equipped science and engineering work force is the basis for our economic well-being," he said. ☺

Ask The DPA

Tom Sisk, P.Eng.
Director of Professional Affairs



Q.

I'm getting ready to retire from my job of 20 years. I'm in good health and want to be able to work on a few engineering jobs, from time to time. What's the Association's position in my case?

I'm a registered member of APEGNB living in New Brunswick. I'm also working in a very specialized field. Because of my expertise, I do much of my work, literally on a day-to-day basis, in several different parts of Canada. I often visit a remote site for a day or two and issue a brief report on my findings when I get back. Is there a requirement that I belong to every association in whose territory I find myself?

The simple process of continuing (or resuming) to pay full dues allows full practicing privileges, contingent on the other requirements for practice such as participation in the Continued Competency Assurance Program and the applicable Professional Liability Insurance coverage.

For those professionals who want to stay connected to their Association but aren't planning on practicing engineering, they can apply for a reduction in membership dues (to 25% of regular membership). The significance of dues abatement is the understanding that the retired member will not engage in engineering while the dues are abated. This is stated clearly in By-law 5.2.4.

A.

The short answer is yes. You must be registered with the provincial association where the work is being performed—even if you're only there for a day or two.

In our Act, the broad definitions of both engineering and geoscience are given, essentially, to set the scope of the Act. In both cases, the wording begins by defining the practice as "...the provision of services for another as an employee or by contract...". The intent of the Act is clarified later to cover the practice of engineering and geoscience in New Brunswick or for use in New Brunswick.

Similarly, every other jurisdiction in Canada has an Act to regulate the professions. They contain wording with similar intent to that contained in our Act. As well, agreement exists between the jurisdictions to assist each other in the regulation of the professions. In all cases, mobility from one jurisdiction to another is possible either through a licensing process or other non-resident membership provision. It is important to note that this mobility is neither automatic nor without cost.

So, if work outside your home jurisdiction is part of your working life, and you provide engineering or geoscience services including professional advice or judgment to earn a living, you should contact the regulatory Association in the province or territory into which you are venturing.



UNB Geology Students Tour Belledune Smelter

In early February, third- and fourth-year students in the University of New Brunswick's mineral resources class headed north for a tour of the Belledune Lead Smelter and Brunswick No. 12 mine and mill complex.



Dave Lentz, PGeo., a UNB geology professor and APEGNB Councillor, snapped these photos and said the facilities' managers and engineers did a "fantastic job hosting the tour and preparing in-depth presentations. I would particularly like to thank Belledune's Bob LeClair for his presentation and his staff for the detailed tour; chief mine geologist, Pierre Bernard, PGeo., for his presentation and his staff for the underground tour at Brunswick No. 12; and metallurgist Ian Orford, PEng., and the Brunswick No. 12 staff at the mill for their tour." ☺



Minister Praises Yvon Cormier, P.Eng.,

In a speech delivered to the New Brunswick legislature in December 2003, the Minister of the New Brunswick Department of Supply and Services (DSS), Dale Graham, praised the work of Yvon Cormier, P.Eng., a DSS regional construction manager in Bathurst.

"Mr. Cormier has been working to bring greater opportunity and greater prosperity

UNB College of Extended Learning Offers Environmental Planning and Management Program

The two-year Environmental Planning and Management Program, customized for New Brunswick, is designed to increase understanding of key environmental concepts and challenges. Through engaged interactivity and joint problem solving, participants will gain pertinent knowledge and skills that will enable them to respond to a company or organization's environmental challenges efficiently and effectively.

According to CEL's program director, Anne Higgins, the courses are not focused on technical matters. "Rather, participants will learn to make informed decisions on environmental issues, with knowledge of different perspectives on important aspects of environmental planning and management."

Higgins says no other institution in the province offers this type of program and that it is ideally suited for managers and those working in ENGOs—"people who need a broad understanding of the complex challenges related to the environment.

For more information call (506) 453-4646 or e-mail: extend@unb.ca ☺



Staples™ Survey Reveals More Than 40 Percent Of Adults Have New Product Ideas Awaiting Discovery

More than 40 percent of adults have had an idea for a new product or innovation, but most never even make it to the drawing board, according to a new national survey sponsored by Staples™. Survey results released in the fall of 2003 reveal the most cited obstacles for bringing ideas to life are not having the money to invest (25%), not knowing where to start (23%), lack of time (22%)

and thinking that the product would never make it on to store shelves (16%).

"It is amazing how many great ideas for products are waiting to be discovered," said Tom Stemberg, chairman and founder of Staples. "Of survey respondents with dormant ideas, 75 percent say lack of money, time and direction are to blame." ☺

his home area of Paquetville. He quickly identified information technology and the knowledge industry as a means to encourage and promote economic, social and cultural development.

"The result was a \$1.8 million project, funded by all three levels of government. Today, the "Centre du savoir" is a beehive of IT activity. It is home to a virtual community college, a community access centre, and a training and education centre. It is also the

headquarters for a non-profit corporation established to facilitate the work of the centre with \$4.5 million in assistance from the federally-funded Smart Communities Program.

“Because of Mr. Cormier’s vision, interest and dedication, communities in the north-east now have access to new jobs, distance education and e-learning opportunities, and e-business and e-government services.

“The Department of Supply and Services is very proud of Mr. Cormier and of his efforts to help his home community and New Brunswick’s rural francophone region.

“The outstanding success of the ‘Centre du savoir’ is an excellent example of how embracing innovation can benefit rural New Brunswick and bring new growth and development to our province.

“It is very fitting that the technology pavilion at the centre has been named after Mr. Cormier and I congratulate him for the work he has been doing in community development.”

Integrated Watershed Planning Conference

The Fundy Model Forest will host a major conference, *Water Quality and Integrated Watershed Planning: Charting the Future*, at the Hotel Beauséjour in Moncton, N.B. June 17 – 19. The purpose of the conference is to bring together experts and practitioners from various landuse planning perspectives in order to provide answers and ideas about water quality and management to those who deal with these issues in their daily practice.

Three full days are planned that move from “Listening and Learning” to “Show and Tell” (field tours) to “Learn by Doing”. A special workshop will be presented June 17 by NCASI (National Council on Air and Stream Improvement) that will focus on forest roads, stream siltation, and issues surrounding water quality issues in this regard. This workshop may be registered for separately from the conference.

More information can be found at www.fundymodelforest.net or by calling 506-432-7575.

Contest Corner

Congratulations to the five winners listed at right who correctly identified Imhotep as being the world’s first documented engineer. Around 2550 BC, Imhotep used simple tools and mathematics to create the Step Pyramid of King Zoser in Saqqarah—an ancient Egyptian burial place near modern-day Cairo. When Imhotep died, he was elevated to the status of a god. His Step Pyramid still stands to this day

- Daniel Després, ing. Léon Chouinard & Fils Cie Ltée Eel River Crossing, NB
- Geoffrey T. Pond, EIT Fredericton, NB
- Abhi Gupta, P.Eng. London, ON
- Mohamed Mobarek, P.Eng. NB Power Fredericton, NB
- Shelly Cunningham, P.Eng. Saint John, NB

Win A Hot Summer APEGNB Prize Package!

Answer this issue’s Contest Question correctly and you could win

All you have to do is e-mail your answer to info@apegnb.com by May 15, 2004. The first five correct submissions drawn win the prize.

- 6 Dunlop Deep-Distance golf balls (with APEGNB logo)
- APEGNB Ball Cap
- APEGNB T-shirt
- Keyboard Duster



Why Does A Golf Ball Have Dimples?

- Because they remind golfers of the Scottish landscape.
- Because they refract light better—making it easier for golfers to find the ball.
- Because Scotland’s King James VI banned feathered golf balls.
- Because they help provide lift.

Completing your engineering or geoscience degree is no small task. For many, it is a five-year time commitment, a substantial monetary investment, possibly a token amount of headaches, and probably a large degree of stress. Whatever your academic standing, the accomplishment is yours to accept the credit for. But now that you have your freshly sealed degree, what are you going to do with it?

You've graduated... now what?

Contributed by Paul Cole, P.Eng.,
2003 Chair of the APEGNB Internship Committee

your questions on your way to P.Eng./P.Geo. status, but ultimately, you are the one who must ensure you meet all of the requirements of the EIT/GIT program:

1. application of theory
2. practical experience
3. management/communication skills
4. awareness of social implications
5. well-rounded work program

Having this sort of documentation can really save your bacon when settling changes to the work on a project, protecting yourself from a sneaky co-worker, or even when negotiating for your next pay raise! The bottom line is a journal will not only help you track achievements, but will protect your interests should problems arise. There. I've said it. That is the toughest part of the entire EIT/GIT program.

For most, achieving your professional engineering or geoscience designation should be the next logical step on your path to career success.

To ease your mind, I am pleased to tell you that becoming a professional engineer (P.Eng.) or professional geoscientist (P.Geo.) is not so daunting or difficult a task as earning your degree.

I can recall one of my first engineering classes early in first year. The room was overcrowded, and the professor was exasperated at being overbooked again. He asked that we look at our left and right neighbours. He then advised us that one of the three of us would most likely not complete his course successfully. He then added that the decision to pass, fail, or drop the class was ours to make.

Obtaining my P.Eng. designation, thankfully, was not nearly as intimidating or discouraging as that class. However, like those classes, successfully completing the engineer-in-training (EIT) or geoscientist-in-training (GIT) program is totally the responsibility of each individual. It is up to each individual EIT/GIT to complete and submit their logbooks or mentor reports. Even canvassing sponsors and applying for your professional status is your responsibility.

The Association can connect you with mentors, provide guidance and answer



logbook
Keep a logbook!

As a member of the Internship Committee, the hardest part of meeting these criteria that we see is consistently documenting the work you normally perform!

Keep A Logbook!

Speaking from personal experience, the importance of keeping a work journal or logbook is severely under-emphasized by the Association and employers alike. A logbook can help track everything from the hours you work to a discussion between yourself and a client, to changes for a project as agreed on site.

Personally, the greatest benefit I experienced as an EIT was the networking opportunities provided during Association events. While attending my first Annual Meeting, I was introduced to several people on the Admissions and Logbook Committees. Speaking face-to-face with these people gave them a better understanding of the

work I did, the experience I was gaining, and what I might contribute to our Association. It also gave me a clear understanding of what was expected of me in my logbook submissions, and as an EIT in general.

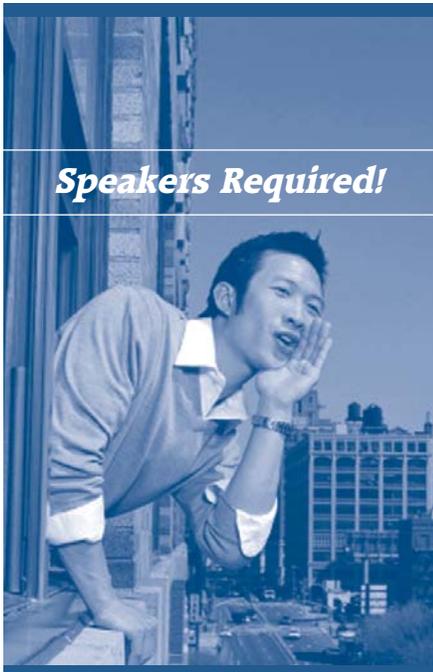
Not all new graduates are going to work for a big, multi-office corporation, let alone a multi-national firm. Meeting and interacting with members of APEGNB will help diversify the projects you can be exposed to, the work you may perform and your experience gained in general. It will provide you

with a broad base of contacts, which are like the MasterCard commercial: Priceless.

APEGNB members are widely regarded as some of the most knowledgeable and capable in the world. Having access to this from “the inside” is an invaluable tool. The advice and guidance that I received from members during my term as an EIT made my life easier, and my application for P.Eng. status much simpler. I learned as much during my three years as an EIT as I did in all my years at university.

Oh, yeah, there are money incentives, too. Members often qualify for cheap (read: slightly more affordable) home, auto, life and disability insurance. And to top that, all your dues are tax deductible! **So don't forget to register with APEGNB as an EIT or GIT once you graduate!** It's one of the best things you can do for your career.

For more information on registering as an engineer-in-training or geoscientist-in-training, visit our web site (www.apegnb.com) or contact Michelle Westall, registration coordinator (michelle@apegnb.com)



Speakers Required!

APEGNB Protects Your Privacy

Like most Associations and businesses in Canada, APEGNB came under the influence PIPEDA on January 1 of this year. The Personal Information Protection and Electronic Data Act is intended to provide protection against the distribution of personal information unless permission has been given to distribute that information. A common example of this distribution would be the sale of a database with your home contact information in it to a marketing company.

APEGNB has always taken the confidentiality of our members' information very seriously. Nonetheless, preparation for PIPEDA was in progress through much of 2003. Steps have been taken to ensure that members' data is secure and not distributed, either accidentally or deliberately. It has meant some changes at the office including the construction of a separate secure file room, implementing a staff awareness program and producing the required documents and brochures.



In retrospect, some of the new procedures just made good sense. Setting the computer screensaver passwords to be active, routine mandatory changes to computer access passwords and even using the “blind copy” method of distributing e-mails to a list helps protect against personal information being accidentally distributed. It has also allowed a formalized process to be followed should a member wish to examine his or her file. A staff manual of privacy procedures and a brochure for public distribution is in production. As well, the privacy information will be added to the APEGNB web site in the near future.

Members' inquiries related to privacy can be directed to the Privacy Officer at the Association office, (506) 458-8083 or by e-mailing to privacy@apegnb.com.

Climate Change Impact and Adaptation

CCPE's Climate Change Impact and Adaptation Secretariat is implementing a national action plan endorsed by the 12 associations/ordre that includes increasing knowledge and awareness among the engineering community, scientists, students, government and the general public. The CCPE is creating a Speakers Bureau as well as a knowledge base and

clearing-house for information on the basic science of climate change impact, best practices and engineering applications.

Please contact **David Lapp**, P.Eng., Manager, Professional Practice at CCPE 613-232-2474 ext 240 or david.lapp@ccpe.ca. if you wish to send information or volunteer to speak on current and best practices as well as any

research, development or pilot projects that demonstrate engineering applications adapting to climate change. Let's raise the awareness of our profession, governments and the public on this very important issue. Adaptation to climate change is our job - **let's show real leadership!**

A fghanistan is considered by many to be the most mine-infested country in the world. Landmines are scattered or buried beside roads, on mountainsides, in pasture land, on the banks of rivers and even inside houses.



The ILDS protection vehicle hunts and clears anti-personnel mines in Afghanistan.

40 people at least 40 people are stepping on these mines every week

The U.S. State Department estimates the number of mines planted in Afghan soil at five to seven million. Other estimates reach or exceed 10 million—especially if you include unexploded ordnance in those figures. Because most minefields are unmapped and records have been lost or destroyed, reliable statistics on the actual number of mines vary greatly.

What governments do know for certain is that at least 40 people are stepping on these mines every week.

De-mining the country is a difficult and deadly task. No more than 20 to 25 percent of the mines in Afghanistan have been removed since de-mining started in 1990, and international agencies say it will take years to clear the remainder.

Captain Jason Gale, a mines and countermines officer with the 3rd Battalion Royal Canadian Regiment Battalion Group, just returned from Kabul in February 2004. His field squadron plays an enormous role in mine clearance.

*Capt. Jason Gale
Operation Athena
Kabul.*



“We are responsible for route reconnaissance and ensuring that our soldiers and civilians aren’t at risk in mined areas,” says Gale. “Researching suspected minefield locations and battlefields to assess the risk to our troops before they undertake work took up the largest portion of my time in Kabul.”

Although most landmines are still cleared by hand, technology may soon change that. While Capt. Gale was still in Kabul, he had the opportunity to deploy the Improved Landmine Detection System (ILDS) for the very first time in a combat environment.

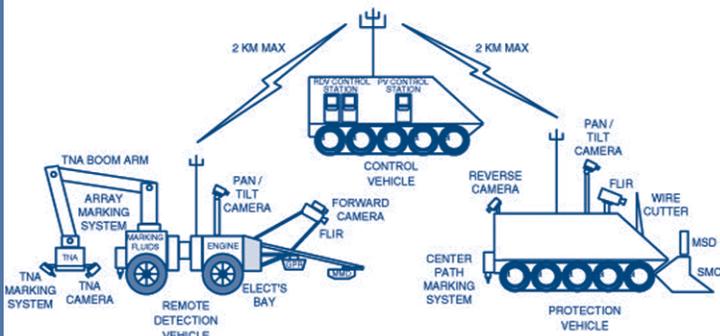
The ILDS is a three-vehicle system that is operated by remote control. It was designed and built by General Dynamics in Calgary exclusively for the Canadian military.

“It’s an incredible piece of technology,” says Gale. “It allows us to clear surface mines and detect and mark buried anti-tank mines from a safe distance. Just knowing where the mines are located is a huge step forward in saving the lives of our soldiers and the Afghan people.”

The ILDS consists of a protection vehicle, a remote detection vehicle and a control vehicle. The control vehicle is located in a safe zone and remotely operates the first two vehicles.

The protection vehicle is sent into the mined area first. It is heavily armed and comes equipped with a variety of

The Canadian Armed Forces was the first army in the world to deploy the high-tech Improved Landmine Detection System. The ILDS minimizes the risks for the military engineers who have to detonate the mines.



Postcard from Kabul

engenuity

cameras and sensors. Because the protection vehicle can withstand a blast from an anti-personnel mine (APM), its primary job is to plow away surface mines and clear the route for the remote detection vehicle.

Once the protection vehicle clears the area of APMs, the remote detection vehicle moves in to find the buried anti-tank mines. With its huge tires delivering low ground pressure, the remote detection vehicle has the ability to pass over pressure-activated mines and mark them for disposal.

While in Kabul, Captain Gale and his ILDS team were called in by the Americans to clear a long, narrow, fenced-in strip of land around the Bagram, Airfield. In just nine days, the Canadian engineers, with the help of ILDS, covered the 700-metre piece of

land and removed an astounding 288 mines—one of the highest number of mines removed by any of the Coalition Forces.

“There was a mine every metre or so,” says Gale. “I don’t know if we got them

all. If we could have used the remote detection vehicle on this task, we would have had the confidence to sign and stamp that area as being mine-free.”

Gale says the engineering advances Canada is making in mine detection

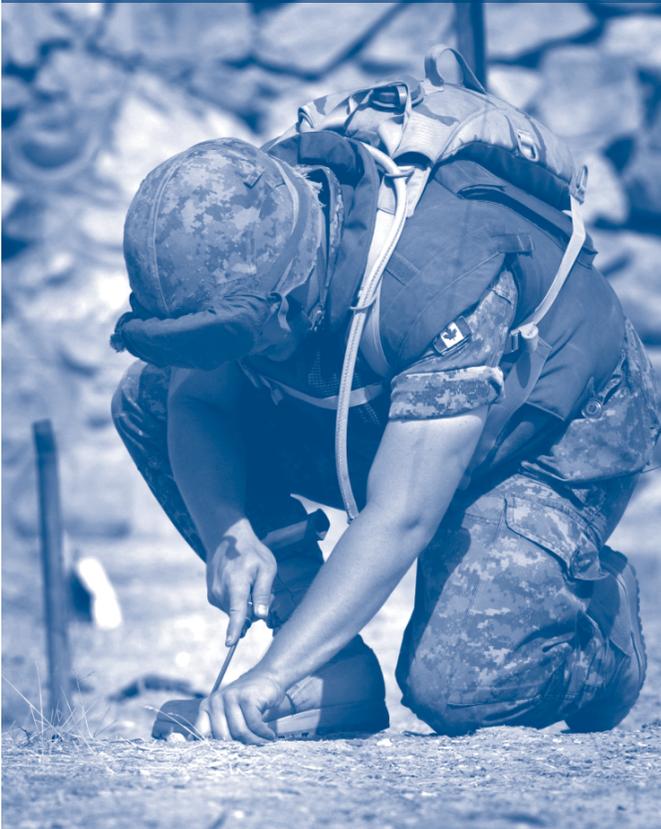
and removal will save thousands of lives. “We already have the reputation as being one of the top countermine militaries in the world. I’d like to see us become the top country in the world for mine detection and clearance.”

Captain Gale says his time in Kabul

Capt. Jason Gale, mines and countermines officer, is on the job at Camp Julien in Kabul, Afghanistan.



A Canadian combat engineer carefully prods a minefield in Afghanistan.



top in the world
We already have the reputation as being one of the top countermine militaries in the world.

was an eye-opener. “I definitely appreciate Canada more. Here, our kids have a good chance at a safe and healthy life. They draw houses and flowers and happy pictures. In Afghanistan, they draw soldiers and army camps.

“Landmines are a sad part of daily life in Afghanistan. But it is a good feeling knowing that, day after day, Canada’s military and combat engineers are making Kabul a more stable and safer place to work and live. I’m confident that our efforts will have a very positive impact in the overall reconstruction of the Afghan country and government. The only reward of spending time away from family and friends is knowing that what we are doing is making a difference in the lives of those much less fortunate than ourselves.”

Thirteen years ago, when Michael Bell, P.Eng., received his undergraduate degree in electrical engineering from the University of New Brunswick (UNB), he thought his education was complete. Today, more than 50 courses and several designations later, the 35-year-old Fredericton native neatly fits into the category of life-long learner.

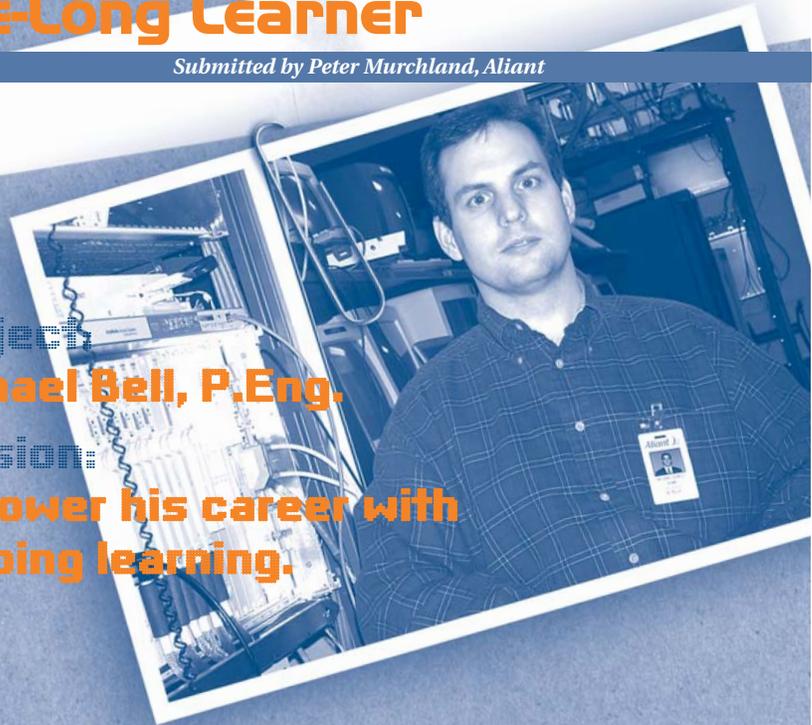
"I believe in life-long learning," says Bell, from his office in Saint John. "It's certainly helped propel me in my career."

Bell has worked for Aliant since graduating from UNB and is currently the senior project manager in Aliant's

Michael Bell – Life-Long Learner

Submitted by Peter Murchland, Aliant

subject:
Michael Bell, P.Eng.
mission:
To power his career with ongoing learning.



customer services engineer, project team member and project manager.

"Through the years, the projects that I have played a role in bringing to life have helped me realize the importance of teamwork and innovation," says Bell.

Bell realized the power of teamwork when he and several others invented a service called 'TV Talk'. TV Talk is a service that allows customers to use their television sets as the display part

mail messages through the television. The service was on trial in New Brunswick several years ago.

Bell has taken MBA courses and more than 50 technical courses over the past several years. He obtained his Project Management Professional (PMP) certification from the Project Management Institute (PMI) in 1999. The PMP certification involves the study of applied management techniques.

"In project management, I've learned to manage teams to solve business problems – I've found my engineering and business skills have really helped me become a stronger employee," says Bell

Bell has been married for 11 years to his wife Tanya. Michael, Tanya and their three sons, Justin, 9, Josh, 6, and Joel, 5, live in Saint John. ☺

teamwork innovation
"Through the years, the projects that I have played a role in bringing to life have helped me realize the importance of teamwork and innovation,"

Project Management Office. During his career at Aliant, he has worked as manager trainee, design engineer,

of their telephone (i.e. caller line ID, caller log, phone directory, etc.). TV Talk also facilitated listening to voice-

Résumé Fraud Gets Slicker

By Anupama Chandrasekaran - Reuters

Simple misrepresentation of facts on a résumé is passé. Lying convincingly is in.

As companies, via background searches, try to call the bluff of less-than-honest job seekers, candidates are resorting to more complex, sometimes hi-tech means to hoodwink potential employers.

Some applicants are providing employers with toll-free phone numbers, which are answered by operators of websites that not only offer phony academic degrees, but also "verify" a job seeker's education.

And, in an effort to put more credibility into embellishing their résumé, some candidates are paying hackers to plug their names into a class list database of a university they claim to have attended.

"Candidates are allegedly breaking the law to get a particular job or promotion, and that is pretty much going to the full extent of the limit," said **Scott Pustizzi**, vice president at The Human Equation, Florida-based human resources consultants.

People could be charged with a felony for hacking into a university's database, according to criminal lawyers. And if a false degree leads to higher pay for a job candidate, he or she could be accused of criminal fraud by the employer.

While the uncertain employment market is pushing job hunters to such convoluted extremes, inadequate security for database systems and a long list of websites offering fake degrees only serve to facilitate résumé fraud.

The background search firm ADP Screening and Selection Services, in a 2003 study, found that more than 50 percent of the people on whom it conducted employment and education checks had submitted false information, compared with about 40 percent in 2002.



This has prompted an increasing number of companies to do more thorough background checks of candidates.

A 2003 survey of more than 200 companies by Virginia-based Society for Human Resource Management revealed that 80 percent of them made reference and criminal checks on their employees.

Still, some applicants continue to get smarter and slicker at defrauding employers and are crossing legal limits to snatch jobs away from otherwise equally qualified honest candidates.

Transcripts - Coming Soon

Companies seeking to get a clearer picture of a candidate's qualifications via background checks are uncovering other new forms of deception.

"In the past, people just lied," said **Charles Wardell**, managing director at executive search firm Korn/Ferry International. "Now, what they are doing is they are hacking into a class of a university and putting their name on the class list."

Wardell said he has come across cases where some candidates are paying hackers to break into the databases of universities. If recruiting firms called the university to check the candidate's

degree, the school would confirm it because the applicant's name would indeed appear on the list.

Breaking into a database is relatively easy because most database servers are not password protected, said **Alfred Huger**, director of engineering at anti-virus company Symantec.

So, Korn/Ferry has started requesting degrees and, in some cases, even grades from potential candidates as proof of their academic claims.

But as corporate investigations company Kroll points out, documents such as scholastic degrees and grades can also be concocted with the help of numerous websites that provide such services.

Websites such as <http://www.fakedegrees.com> help job hunters cook the facts and even lists out-service enhancements. "Transcripts - Coming Soon" says one promotion on that site.

Other sites such as <http://easydiploma.com> go a step further and offer verification service.

"You can select the parchment paper, the insignia and the type of degree," said **Bob Schlossnagle**, president of Kroll's background screening division. "And one of the things they (websites) are now doing to enhance their service is they will give you a 1-800 number to give your potential employer. And when employers call they will actually confirm the degree."

Background search firms admit their job is getting harder with the increasing level of sophistication in résumé fraud.

"A good liar understands that you have to have some basis and facts to pull off a scam," said **Lester Rosen**, president of California-based Employment Screening Resources. "But it's even more dangerous when employers unknowingly hire a fraud, thief or a crook." ☹

This fall, the most modern and largest YMCA facility in Atlantic Canada will be opening its doors at the corner of Vaughn Harvey Boulevard and John Street in Moncton—and two APEGNB members are proud to be a part of the landmark construction project.

APEGNB members lend expertise to the new Moncton YMCA

Sherry Sparks, P.Eng. (left) does a site inspection.



Sherry Sparks, P.Eng., is the environmental impact assessment manager for the provincial government. Sparks has been involved with the Moncton YMCA since 1984. “At first, I was going to the Y to take advantage of their excellent exercise and child care programs. But like many Y members, I knew I could do more than just support its many programs. I decided to volunteer.”

Since then, Sparks has helped out with fundraising, served on numerous committees and this year, her name was added to the YMCA’s Board of Directors. Her career experience as a project engineer and design engineer made her an obvious choice to serve on the new YMCA’s building and construction committees.

“After investing a tremendous amount of time with the Y members selecting a project management construction team and reviewing plans and specifications throughout the building’s design process, it is truly wonderful to see the building take shape—and know you were part of the team.”

Her colleague and fellow YMCA construction volunteer, **Bill Goobie**, P.Eng., agrees. “I can honestly say that I’ve learned a lot about the different forms of construction management I hadn’t been exposed to in the past. It has been a very worthwhile experience. I can’t help but say that I will also feel proud when the new building opens!”

Here’s what the new two-storey Greater Moncton YMCA will offer visitors and members:

- 60,000 square feet of barrier-free space
- 250 parking spaces
- An Aquatic Centre with three pools
- A main gymnasium on the ground floor with five locker rooms
- Adult locker rooms equipped with a whirlpool and steam room
- An educational room complete with computer workstations
- Two multipurpose rooms
- Community service room



An artist’s rendering of the new Moncton YMCA

- Teen/senior’s room
- Daycare and kitchen/café
- Administration areas and meeting rooms.
- Viewing gallery for the pool
- Weight training/ cardio centre
- Activity studio.

Structural Highlights

- Use of long span steel joists over the gymnasium and pool areas in order

to provide an attractive, cost-effective solution while framing these large open areas.

- Use of special coating system in pool area to prevent deterioration of the steel framing and roof deck from the humid conditions at the pool area.
- Use of a composite beam and concrete slab system to support the level 2 exercise area in order to control vibrations and minimize structural depths.
- Use of masonry shear walls to resist lateral loads and deflections throughout the building.
- Gymnasium and most of the second floor is equipped with masonry sound block and acoustic roof decking.

Mechanical Highlights

- Pool room (natatorium) dehumidification system with heat rejection to provide heat to all areas of the building when necessary and also to provide pre-heating of all domestic hot water needs.
- Closed loop reverse cycle water source heat pump systems to provide internal building environmental control utilizing variable flow pumping systems and high efficiency refrigerants to reduce energy costs.
- Variable flow fresh air systems with carbon dioxide detection monitoring to provide ventilation to all areas of the building while meeting the needs of the varied occupancy schedules and uses.
- In-floor hot water heating for children at the daycare.
- Natural gas fired boilers to provide supplemental energy when necessary.
- Latest technology in pool water chemistry control without the use of chlorine. The chemistry for the pool is referred to as "salt chlorine generation" in lieu of the traditional "liquid chlorine injection" system.

(Just imagine! No more red eyes or allergic skin reactions! The YMCA pools will be the only pools in Moncton with this type of treatment system.)

Electrical Highlights

- The interior of the building uses indirect metal halide light or fluorescent sources to provide a quality of light that is free of disability glare and veiling reflections.
- The exterior of the building and the parking areas are illuminated using cut-off luminaires which will reduce the glare from the light fixtures from the ground. These styles of fixtures will also reduce the "light pollution" typical of exterior lighting and are in line with the intent of the "dark sky" concept.
- "Assistive" listening for the hearing impaired is installed in the gym, daycare and multi-purpose room.

Design Team:

Architectural:

Prodel Design Inc.,
Douglas Grass/ Architect Ltd

Structural:

Valron Engineering Inc

Mechanical:

Eastcan Consultants

Electrical:

M.A. LeBlanc & Associates Ltd.

Project Management :

Ellis Don

Engenuity thanks **Sherry Sparks, P.Eng.**, for contributing the background information for this article.



WATER QUALITY AND INTEGRATED WATERSHED PLANNING CHARTING THE FUTURE

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The spiral staircase, located inside New Brunswick's Legislative Assembly Building, stands as a proud yet subtle reminder of the province's long and rich history; its winding steps indicative of the twists and turns of politics in the capital city for over 120 years.

Since June 2003, this aging piece of 19th-century architecture has been undergoing a restoration to repair and preserve its historic character for future generations. The renovations, tendered by the New Brunswick Department of Supply and Services, will be completed this spring.

"The Legislative Assembly Building is a designated historic structure," Supply and Services Minister **Dale Graham** said. "Its spiral staircase is one of the most intriguing features of the building."

A proud reminder
the spiral staircase stands as a proud yet
subtle reminder of the province's long and
rich history

Located in the rear of the main entrance to the Legislative Assembly Building, the wood-framed, free-standing stairwell was constructed in the 1880s. Over time, it developed a significant lean and was considered a structural risk. Plans for its restoration have been in the making for about ten years.

"The building is the focal point of Parliament Square," Legislative Assembly Speaker **Bev Harrison** said. "As you enter the building, its spiral staircase is the most impressive architectural element. The recent structural upgrading of the old staircase retains the historical integrity,

Historic staircase undergoes restoration at Legislative Assembly

beauty and artistry of the original design. At the same time, the work ensures that current structural standards are met."

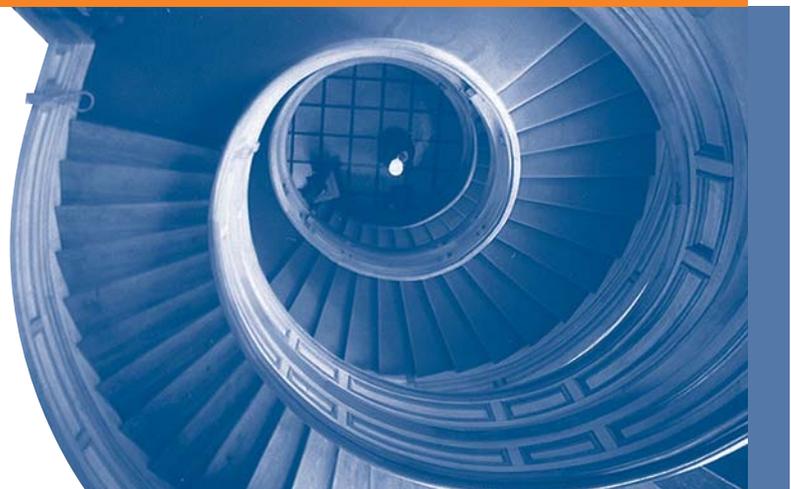
Harrison explained three of the province's older public buildings are located within the borders of Queen Street, St. John Street, King Street and Secretary Lane. They are the old Education Building, the Legislative Assembly Building and the Departmental Building. In November 2000, a plaque was unveiled on the legislature grounds commemorating the official designation of Parliament Square as a protected historic site. Harrison said staff of the legislature have partnered with officials in the Department of Supply and Services and the Culture and Sport Secretariat to

develop an overall strategy for the restoration, maintenance and preservation of the site.

The legislature's circular staircase ascends to two stories. The treads and risers are made of pine, while the curved wooden handrail consists of ash with tongue-and-groove wainscoting on the inside of the stair and ash paneling with cherry moldings on the exterior wall. The newel, or centre pillar, the most decorative component of the stair, repeats the ash and cherry theme in a grand Romanesque setting (Roman style) with engraved columns, egg-and-dart detailing and flower motifs. Stairwells of its time were built to give a majestic and stately appearance to important buildings. Master craftspeople would design and build a spiral staircase to display their artistic and constructive abilities.

The restoration project at the legislature was publicly tendered and construction was awarded to King Construction Limited of Fredericton.

"This was an exciting and very interesting project," said **Keith Thompson**, P.Eng., structural engineer for Eastern Designers and Company Ltd. in



Fredericton. "The primary objective was to upgrade the strength of the staircase so that it could safely support the loading requirements mandated by current building codes. The challenge was to do so without altering the appearance of the staircase in any way."

Thompson explained the work was accomplished by hiding eight rigid steel columns between the interior plastered surface of the stairwell and the exterior stone walls that form the octagonal shape of the tower. Steel beams were extended from these columns within the thickness of the stair stringers to support the staircase and the ornate curved wood handrail. Once the plaster was restored on the walls and the underside of the staircase, all the steel reinforcements were hidden from view and the staircase was restored to its original appearance.

In beginning their work, one of the first challenges the engineers faced was to determine how the staircase functioned for more than a century. There were many possible load carrying mechanisms that would explain how the staircase worked. However, none of these would provide the assurance and safety required by modern engineering practices. The engineers decided to take a closer look.

"The original construction drawings contained no details on the staircase," Thompson said. "Therefore, it was necessary to cut away some of the architectural covering at the initial stages of the design in order to ensure the new steel members would work with the existing load carrying element of the staircase."

The second challenge was to design a steel system small enough to fit inside the existing finishes, yet rigid enough to support today's design loads. Once the system was designed, the next challenge was to actually get it in place.

Dynex Manufacturing Limited of Fredericton was the steel fabricator and sub-contractor in charge of the actual

installation and fastening of the steel members to the wood staircase and surrounding walls.

"The Dynex designers, detailers and erection crew were very creative in developing methods to slip steel members, weighing hundreds of pounds, through small openings and then fasten these members to the wood with very limited room to work," Thompson said.

Working with dry, century-old wood presented another challenge. For example, great care had to be taken in leveling the stairs so as not to disturb the overall structure or cause it damage.

"This was particularly true in trying to determine how much of the existing sag in the staircase could be corrected before the wood in the staircase would crack," Thompson said. "The combined knowledge and expertise of all the

partners on the project helped to determine how high to jack up the staircase. The end result is that, while the staircase is not perfectly level, the slope on the treads is much less noticeable and the delicate woodwork was not damaged in the jacking process."

The final challenge was the constant discovery of varying conditions in the stairs as finishes were removed throughout the construction period. This situation required that changes be made to detail almost on a daily basis. Removing and replacing a three-coat system of plastering and upgrading a 1938 sprinkler system also proved to be lengthy tasks.

"It took time and teamwork to carry out the necessary repairs," Minister Graham added. "We are very pleased with the results and to have made these long needed improvements to the staircase at the people's house." ☺



L'ÉTS, le génie pour l'industrie

L'École de technologie supérieure, l'un des dix établissements du réseau de l'Université du Québec, offre des programmes de baccalauréat, maîtrise et doctorat en génie. Sa mission est axée vers l'ingénierie d'application et elle privilégie la filière de formation technologique. Elle maintient des liens étroits avec l'industrie grâce à son système d'enseignement coopératif, ses activités de recherche et la participation de nombreux industriels à ses instances décisionnelles.

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- Génie mécanique

Pour de plus amples renseignements sur les disciplines exactes recherchées, les fonctions et les qualifications, veuillez consulter l'annonce à l'adresse :

<http://offredemploi.etsmtl.ca>

Conformément aux exigences prescrites en matière d'immigration au Canada, cette annonce s'adresse en priorité aux citoyens canadiens et aux résidents permanents. Seules les personnes retenues pour une entrevue seront contactées. Le générique masculin est utilisé uniquement afin d'alléger le texte.

www.etsmtl.ca

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ROACH, A. GRANT, EIT
ROBERTSON, MICHAEL R.J., EIT
ROSS, MARTHA P., EIT
ROY, RAPHAEL, EIT
SAVOIE, NADIA, EIT
SCHEME, ERIC J., EIT
SMALL, STEVE, EIT
STEEVES, BLAIR G., EIT
STILES, SHAUN A., EIT
WONG, SWEE, EIT
WOOD, CANDICE E., EIT

Licencees:

BOWICK, JOHN D., P.ENG.
CHIN, LLOYD W.G., P.ENG.
EISINGER, WILLIAM G., P.ENG.
ELLIS, DAVID R., P.ENG.
FILIPOVIC, JIRI, P.ENG.
HILDEBRAND, MARTIN, P.ENG.
HUSSON, D. PAUL, P.ENG.
KATSOUKAKOS, SAM, P.ENG.
KOZIOL, ROBERT W., P.ENG.
LABRIE, MARIO, P.ENG.
LEMIEUX, CHRISTIAN, P.ENG.
MARTIN, LESLIE, P.ENG.
MATTATALL, TIMOTHY, P.ENG.
MICHELS, JACK, P.ENG.
MROZ, EDWARD N., P.ENG.
O'ROURKE, TOM, P.ENG.

RICHARDSON, H. DARYL, P.ENG.
SAKAUYE, DARRELL M., P.ENG.
THOMPSON, BRADLEY D., P.ENG.
VERMEY, RONALD, P.ENG.

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ROMARO 2000 LTÉE, ST-VICTOR DE BEAUCE, QC
STONE & WEBSTER CANADA L.P., TORONTO, ON

Resignations:

BÉLANGER, MARCO
HANNAH, KENDRA J.
JOHNSON, MARK R.
KEMP, DAVID
MOSHER, IAN F.
PAQUETTE, LUC
QUENNEVILLE, J.H. PIERRE
SCHAAF, ROBERT E.
STEPHENS, THOMAS
THOMAS, DOROTHY
WILSON, ROBERT B.

Transfers-Out:

ARSENAULT, MAURICE
BLAIS, MARIANNE
DESPRES, VINCENT
DUGUAY, JACQUE
GILBERT, LAVAL
O'NEILL, DWAYNE LESTER
WANG, HUICHAO (ROY)

Deceased:

HIGGINSON, THOMAS C.
LOCKHART, C.O.
MURRAY, GLENN (DOUG)

CORRECTION

On page 4 of the winter 2004 issue of *Engenuity*, Mr. Gopal Bajoria, P.Eng., was incorrectly listed as an EIT. Mr. Bajoria should have been listed under the "Transfers-In" heading. APEGNB regrets any inconvenience this mistake may have caused.

Looking for Emeralds? Follow the Green Beryl Road

By Melissa Mertz

New Brunswick may not have an Emerald City but according to the geological surveys branch of the NB Department of Natural Resources, some of the criteria necessary for the formation of emeralds are present in New Brunswick.

“Emeralds are a rare form of the mineral beryl,” explains DNR geologist, **Reg Wilson, PGeo.** “Although emeralds have never been reported from New Brunswick, beryls are not uncommon in some areas.”

According to Wilson and fellow DNR geologist, **Jim Walker, PGeo.**, the Miramichi Highlands are a good starting point for emerald hunters. “This area exhibits a similar tectonic environment to that of southeastern Yukon where emeralds were discovered in 1998,” says Walker. “Granitic rocks that host the beryl occurrences in the Miramichi Highlands are found in the same general area as black shales that contain elevated levels of vanadium and chromium – the elements that distinguish emerald from ordinary beryl. If hydrothermal fluids from beryllium-rich, granitic magma interacted with the black shales, then you've got an environment ready for emeralds.”

Wilson and Walker say that for those interested in prospecting for emeralds, beryl occurs mainly in the following four areas:

- the Burnthill-Trout Lake area in central New Brunswick
- the Brewers-Mills-Zealand Station area northwest of Fredericton
- Pabineau Lake, south of Bathurst
- the Welsford-Wirral area northwest of Saint John.

Hans Durstling, a gemcutter from Moncton, says he'd be surprised if significant emerald discoveries were made in New Brunswick. “Unlike the Canadian north where the recent emerald discoveries were made, much of New Brunswick has had a long and active

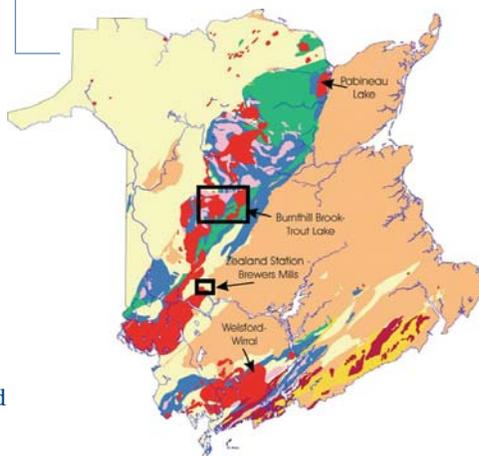


prospecting history. If there are emeralds here, probabilities suggest to me that we'd have seen at least some indications already.

“However, I do know that gems occur unpredictably in small pockets in small areas—making them hard to hunt, easy to miss but not impossible to find. That's why gems typically are the domain of dedicated treasure hunters rather than corporate mining entities. But,” he adds, “the combination of geological factors does sound intriguing.”

For more information on beryl occurrences in New Brunswick, contact:

New Brunswick Department of Natural Resources
Minerals, Policy and Planning Division
 Hugh John Flemming Forestry Centre
 P. O. Box 6000, Fredericton
 New Brunswick, Canada E3B 5H1
 Tel: (506) 453-2206



Special thanks to Jim Walker, PGeo. and Reg Wilson, PGeo., for supplying research and background information.

Emeralds—One of the Rarest and Most Revered Gemstones

- A good emerald is worth more than a same weight diamond.
- Emeralds of the highest quality may reach values of \$100,000 US per carat although a range of between \$50 and \$400 US per carat is typical.
- The name "emerald" originates from the Greek word "Smaragdos" which means "green stone".
- In India, emeralds are believed to have magical healing powers. Rubbing an emerald over closed eyelids is thought to restore tired optic nerves and wearing an emerald bracelet is supposed to help relieve arthritis.
- The Emperor Nero is said to have gazed through a large emerald to soothe his eyes as he watched the gladiator games in the Coliseum.
- 60% of the world's emeralds come from Colombia
- The Hudson Museum at the University of Maine may have the oldest known emerald and the only known pre-colombian carved emerald. The emerald green gem was carved into the shape of a standing figure. It is 2.2 inches tall and weighs 118.5 carats.
- When evaluating emeralds, color is the most important quality factor. Included crystals and cavities are not a hindrance unless they weaken the stone or cause it to appear cloudy or muddy. In fact, emerald inclusions often create a graceful, branch-like pattern known as a "jardin" (French for "garden"). ☺

Seeking Employment

To request a résumé or more information on any candidate listed below, simply fax your organization's name and contact information along with the alpha-numeric code at the beginning of each listing to:

Michelle Westall
Fax: 506-451-9629

ELECTRICAL

MA04-J351B.Sc. Electrical Université de Moncton 2001; B.Eng. Electrical (Co-op Program), 3.6/4.3 GPA, UdeM, 2001, Reg'd EIT; Seeking employment in any area of electrical engineering. Electrical design, project, budget and resource management of test benches for manufactured system, wrote and executed test processes for prototype designs, Micro Optics Design Corporation. Verified software of latest optical based product, wrote and executed test cases, tracked problems in database, provided feedback to design team, verified fixed problems, Nortel Networks. Co-op term: Designed electrical hardware (sensors and relay for valve) for controlling movement of nitrogen containment box. Wrote embedded controls software to control nitrogen box and coating pump. Drew schematics for new designs. Performed electrical troubleshooting on problematic systems, Micro Optics Design Corporation. Co-op term: Assistant Project Manager for work in relation with VIIIe Sommet de la Francophonie, worked in relation with RCMP to setup their various sites, worked with hotels to add extra connections for delegates, NBTel. Fluently bilingual (French and English). Personal and technical skills: Leadership, honest, hard working, motivated, analytical mind. Computer skills: Promis.e, Dynamic C, Unix, MS Project, MS Office.

MA04-J352B.Sc. Electrical UNB Student seeking part-time employment in Fredericton prior to graduation April 2004 and full-time after graduation. Background in repair and military. Completed control system and power system courses.

MECHANICAL

MA04-J451B.Sc. Mechanical UNB 2003; Currently have EIT status with APEGNB. Background in Manufacturing, Machine Design, R&D, and some quality management. Graduated from COOP. Available immediately for full time employment. Bilingual.

NON-REGISTERED

MA04-700 Bachelor of Engineering Electrical Zhengzhou U., China 1993; M.Eng. UNB Electrical Engineering Student; Seeking full-time employment as electrical engineer; In the process of registration as professional engineer with APEGNB; Extensive experience in power system design, test, protection and control; Proficiency in Matlab, AutoCAD, PSCAD; Excellent communication, analytical abilities, project management and problem solving skills. Relocation is not a problem.



From L to R: Eric Ouellette, P.Eng. and his two sons, Alex (age 7) and Andrew (age 10) crouch at the entrance of their own backyard igloo in Grand Falls

Wrapping Up 150 Years of Engineering

Submitted by Jared McGinn, P.Eng.

There has been a lot of reminiscing, story-telling, and general good times while celebrating 150 years of engineering education at the University of New Brunswick. As the official celebrations come to a close, many of us realize how lucky we are to have a world-class faculty of engineering in Fredericton. From Brydone Jack and Sir Edmund



Head to James Dineen and our current dean of engineering, David Coleman, P.Eng., UNB has educated and graduated many notable engineers. The pride of our institution was evident during all of the anniversary events held in February.

The February 11 **gala night** at the Delta Fredericton attracted engineers, educators and alumni from across the country.

Many engineers, who reconnected with former colleagues and friends, decided to continue the celebrations at nearby establishments.

The following day, the **Engineering Education Symposium** was held on the UNB campus at the Wu Conference Centre.

On Friday the 13th, students lucked out with a big **engineering birthday party** at the Student Union Building. Two great bands were enjoyed by one and all. Assistant engineering professor, **Marty Gordon**, P.Eng., and faculty secretary, **Heather Jones**, were certainly the leaders of the group.

With one day (Saturday) to catch our breath, Head Hall was opened to the public. Sunday and Monday saw Engineering's **Open House** turn into a resounding success, where persons of all ages made their way from one display to another.



There are many people, companies and of course APEGNB to thank for their attendance and sponsorship. But **congratulations** and a heartfelt **thanks** are to be extended to the students. These students who took on the task of planning, organizing and setting up the many events and activities. There could not have been a group of students more dedicated and resourceful than this group. Led by **Peter Allaby** (the chair of the committee) **Blair Lock**, **Levi Hargrove**, **Melissa Dawe**, **Leah Burton**, **Shelley Huntley** and **Lyle Skinner** these students devoted many hours on the 150 years video and the celebration events, when they already had the demands of work and studies of their own life.

The legacy of these celebrations is the connection with our engineering past. The student committee will probably never forget the feeling of being connected to students who walked through this hilly campus over the last century and a half. *To their credit they found out it was important.* ☺

Eric Builds an Igloo

The frigid winter temperatures may have kept most people inside their homes in January but not APEGNB Councillor, **Eric Ouellette**, P.Eng. He took advantage of the icy weather to build his own backyard igloo.

Eric and his sons Alex and Andrew constructed the 8 foot by 7 foot igloo on January 17. By March 3, the warmer temperatures caused it to collapse.

"It was pretty strong," says Eric. "My sisters and 14-year-old nephew were climbing on the roof the week before it collapsed so I know it was solidly constructed and gravity didn't bring it down."

Eric decided to build the igloo because he had never seen one except in books. "The kids were outside building a fort one day and I decided to help out. The next thing you know, we have an igloo!"

The igloo took about 20 hours of back-breaking work including the many cold nights when Eric was outside with the garden hose—watering it down. Eric used a saw to cut the wedges of hard snow and two sleds so Alex and Andrew could cart them to the "construction" site.

If you're thinking of building your own igloo next year, Eric suggests you take extra-special care completing the roof but he wouldn't want to offer too much more advice. "I'm not an expert. I felt confident of my own igloo's integrity but I also know how it was built. I wouldn't want to generalize on any other igloo projects.

"It was quite an operation and I'm sure the kids will never forget the year we built the igloo. I guess that's what really counts at the end of the day." ☺