

THE PROFESSIONAL



EDGE

ISSUE 145, JULY/AUGUST 2013



Infrastructure

Attention Students:

16 New Engineering and Geoscience Scholarships Available

The Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) is pleased to announce the launch of 16 new scholarships to be awarded annually beginning Fall 2013 at the University of Saskatchewan and the University of Regina.

Entrance Bursaries

These bursaries are aimed at encouraging and assisting high school graduates entering the study of engineering or geoscience. These bursaries are particularly aimed at Aboriginal students who are under-represented in the professions.

Two bursaries of \$3,625 (one for each university) to be applied towards first-year tuition in any field of engineering for a self-identified Aboriginal student.

Two bursaries of \$2,750 (one for each university) to be applied towards first-year tuition in any field of geoscience for a self-identified Aboriginal student.

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Two scholarships of \$1,875 (one for each university) for current students of any field of geoscience.

Graduate Students

These merit-based scholarships are aimed at encouraging existing APEGS members to further their education.

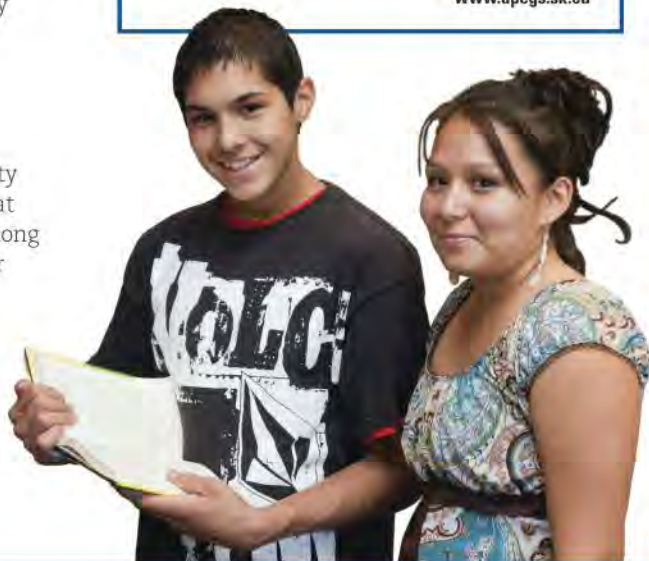
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Professional Engineers and Geoscientists

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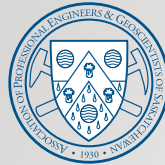
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President's Report



President Dwayne A. Gelowitz, P.Eng., FEC

At the end of May and in early June I had the privilege of travelling to Winnipeg and Yellowknife to attend the Geoscientists Canada and Engineers Canada annual meetings.

These meetings reinforced my understanding of the national issues affecting both of the professions.

One of the most significant issues being discussed nationally at Geoscientists Canada is the current negotiations between some constituent associations surrounding incidental practice. These constituent associations wish to sign an agreement whereby practitioners in one jurisdiction can enter and practice in a second participating jurisdiction for a limited time without registration and potentially without the knowledge of the second jurisdiction. Advocates of this practice claim the need on the basis of mobility but it is believed that the main reason for promotion of this practice is a reluctance of practitioners to paying fees in multiple jurisdictions.

APEGS is strongly opposed to this practice and your council unanimously passed a motion at the April Council Meeting in opposition to incidental practice. We also sent a letter in June to one of the constituent associations opposing its decision to move forward with incidental practice.

We believe that this constitutes unlicensed practice, which is in direct conflict with the main objectives of the professions which are registration of practitioners within each province and protecting the public. Council believes this practice cannot add to the protection the public and can potentially result in weakening of the professions and problems with enforcement should an incident happen requiring enforcement. We also believe that unlicensed practice has the potential to jeopardize self-regulation if provincial governments believe that the profession are not fulfilling their core mandate.

Mobility within provinces and territories can be accomplished within a day or two with the current practices in place across the country. We do not believe that these requirements are an impediment to practice in multiple jurisdictions.

The issue of payment of fees and the amount of payment for multiple registrations can be debated but APEGS believes that, regardless of the payment of fees, registration within each jurisdiction must be mandatory.

APEGS has been strongly represented by Sandra Foster, P.Geo., (FEC Hon.) as our Director on the Board of Geoscientists Canada over the past three years. She has been outspoken in advocating for what she and APEGS Council believes is in the best interest of the Geoscience profession. Thank you Sandra.

I am also pleased to report that at the Annual Meeting, APEGS' own Greg Vogelsang, P.Eng., P.Geo. was sworn in as the new Geoscientists Canada President. I look forward to Greg's term as President and know he will accomplish much and serve the profession well. Congratulations Greg.

Geoscientists Canada has also instituted a new Fellow of Geoscientists Canada designation. Dennis Paddock, P.Eng., FEC, FCSSE, FCAE, our Executive Director, was one of the inaugural recipients of a Honorary

Fellowship of Geoscientists Canada for his service to the profession. Congratulations Dennis.

Engineers Canada has been functioning very well over the past year and has been successful in instituting the Carver Governance Model for operation of the association. This change will streamline the association and result in the Board focusing more heavily on the issues facing the profession and governance, while leaving operations in the hands of new CEO Kim Allen, FEC, P.Eng.

Consistency in the registration of members across the country was one of the discussion items at the annual meeting. With full mobility of the profession across Canada, it is important that all constituent associations maintain the same registration standards to ensure the qualifications and level of experience of professional members are upheld.

With this in mind, Engineers Canada has conducted a trial to admit members in training as new professional members based upon meeting defined competencies. APEGS participated in this trial and believes that this is a good way of evaluating the relevant experience of its members in training. This process will likely be adopted nationally with some adjustments to the process over the coming years.

At the annual meeting, Rick Kullman, P.Eng., FEC, our APEGS Engineers Canada Director, was elected to the Executive Committee for the coming year. I have seen Rick

in action and know that he will represent us and all of the profession well. Congratulations Rick.

For the coming year, Dennis Paddock, P.Eng., FEC, FCSSE, FCAE, will also Chair the CEO Group and participate on the Engineers Canada Executive Committee in a consultative role. The experience and corporate history that Dennis brings to the profession across Canada adds value and is much appreciated. Congratulations and thank you Dennis.

Malcolm Reeves, P.Eng., P.Geo., FEC is also the current Chair of the Canadian Engineering Accreditation Board, which evaluates the engineering educational institutions across Canada and ensures the maintenance of our high educational standards. Thank you Malcolm.

Both Geoscientists Canada and Engineers Canada are proposing bylaw revisions to bring the associations into compliance with the new Canada Not-for-Profit Corporations Act which comes into effect in October 2014. These changes are well under way to be completed prior to the deadline.

As you can see, APEGS members are playing a huge role in the professions nationally. Be proud of these members who are representing all of us with distinction, be sure to thank them for their efforts and congratulate them on a job well done.

Dwayne A. Gelowitz, P.Eng., FEC
President



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Farewell to Tomorrow

Communities of Tomorrow Closes Its Doors but Leaves Valuable Legacy

BY MARTIN CHARLTON COMMUNICATIONS



Its name has now become ironic: Communities of Tomorrow (CT) has become a thing of the past. The agency, which has been on the forefront of municipal infrastructure initiatives in Saskatchewan for over a decade, wound down its operations in June but not before putting the finishing touches on a legacy that will serve Saskatchewan municipalities well for years to come.

Founded in 2003, CT was a private-public partnership that sought to develop a hub of infrastructure-oriented research, initiatives and entrepreneurship. Among other things, it worked at building collaborations among Saskatchewan cities – along with researchers and industry partners – to find more efficient and cost-effective ways to maintain and revitalize municipal infrastructure.

The agency gained media attention for some of its flashier accomplishments such as TransitLive, an online app that tracks City of Regina buses in real time, and ShotRods, Morsky Industry's dramatic road repair system that uses missile launcher technology to inject steel support rods into soil.

Most of CT's work, however, focused on projects that were not so headline-grabbing but paid long-term benefits

to Saskatchewan cities and their residents. One of its last major initiatives was the Leveraged Municipal Infrastructure Fund (LMIF) which sought solutions for relatively mundane municipal issues. Research on pothole repair, snow dumps and pavement crack repair may not sound exciting but it leads to major savings in infrastructure costs which puts dollars back in the pockets of cities and taxpayers.

While the agency's work was consistently praised for its quality, CT's functions were distributed to other agencies following a restructuring of provincial research and development funding. Before it closed, CT's LMIF initiative finished production of a set of best practices studies aimed at giving municipalities guidance on a range of practical infrastructure topics.



Building a Legacy

Bland Brown, P.Eng., FEC was the technical support and business development coordinator for CT. Along with other CT officials, Brown travelled the province looking for both the problems and solutions confronting Saskatchewan cities.

"Our role was to build relationships with the appropriate civic officials – the heads of public works, engineering or whatever name they had for that area – plus often city managers and others in the city administration."

"We coaxed out of them what their problems were, what needs they had that weren't being met."

Then and now, Brown sees engineers playing a lead role in developing solutions for municipal issues.

"Most of these activities are led by engineers, whether they be city employees or consultants. They will therefore have access to better information and more workable technologies to improve their work. We are always looking for ideas and advice from infrastructure practitioners. Particularly consulting engineers – they are often the ones who come up with new approaches but they are always very busy with new construction and often don't have time to think about sharing their ideas others."

Through the course of Brown's province-wide consultations, CT identified eight infrastructure priorities that were top-of-mind for city officials. These priorities became the foundations of five reports produced by engineering consultants that reviewed existing practices and made recommendations for future improvements. The full reports have been provided to municipal engineering and public works departments across the province. As well, high level summary documents have been sent to urban politicians and other municipal government decision makers.

PRIORITY 1: Pothole Repair

Never mind asking the experts; just ask urban dwellers to name their top infrastructure concern and you'll likely here a common refrain.

"Every municipality from time immemorial has been concerned about potholes and road break-up. Every municipality has its own set of practices for dealing with these problems. The group felt that they were all working in isolation and that there wasn't a well-defined and documented set of best practices," says Brown.

Clifton Associates prepared an extensive report on pothole identification, assessment and repair. Many of its recommendations are common sense – use good quality materials; repair the hole early before it gets worse – but the report also provided detailed guidance on pothole patching products and equipment.



PRIORITY 2: Asphalt Recycling

For cities looking to cut costs, recycling used road materials is a tempting option. While there has been a lot of interest in these technologies in recent years, there has been relatively little examination of best practices for it.

"There has been a fair amount of scientific work done on recycling roads but no clear standards or guidelines so we wanted to try to work those out. We sought to fill in gaps in the knowledge."

While recycled asphalt is not suitable for all applications, Clifton Associates' review of the industry found that it was an effective and proven cost-saver for many road repair needs. There were, however, a number of applications where Clifton recommended further testing in municipal pilot projects.



PRIORITY 3: Winter sanding and salt

“With our tough Saskatchewan winter driving conditions, sanding and salt are big issues for our cities. There is a great variety of practices across the province. Sand has many variations and constitutions and there are different recipes for salt-sand mixes for different performance on the street. We sought to devise best practices and tried to find if there is an ideal sand-salt mix for particular situations. Also, we wanted to support ongoing research into alternatives that are more environmentally friendly,” Brown said.

Stantec undertook this review for CT. It discovered that municipalities' choices for winter road management had a lot to do with economics. Smaller municipalities simply couldn't afford some of the advanced de-icing compounds and equipment used by larger centres. Stantec, therefore, recommended against establishing an “ideal sand-salt mix”.

Stantec did, however, recommend that all municipalities develop a salt management plan to mitigate the environmental effects of road salting. The firm also recommended further testing of some new eco-friendly alternatives, such as a de-icing product derived from sugar beets.

PRIORITY 4: Road crack repairs

If you've ever heard the old saying “a stitch in time saves nine”, you can likely guess the main recommendation of Stantec's report on asphalt crack sealing practices.

“The point of asphalt on a road is to prevent water from getting into the sub-base. One way water gets through

asphalt is through cracks so it's obviously important that municipalities regularly repair cracks to extend the life of their roads.”

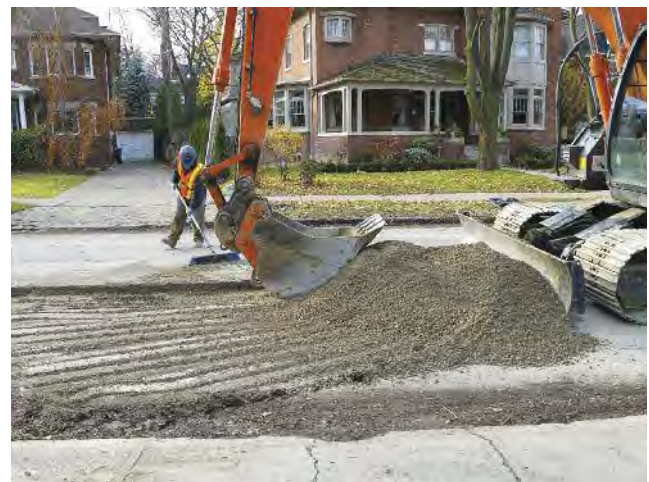
The report reviews numerous asphalt crack sealing substances and methods but its top recommendation to municipalities is, simply, to repair cracks early before they get worse.

PRIORITY 5: Snow dump sites

After the winter of 2013, most Saskatchewan residents are more aware of the importance of municipal snow dumps. While they may look like simple hills of nice white snow, these dumps offer their own set of challenges.

“The main problem here is an environmental one – dealing with salt run-off and accumulation from snow dumps. Saskatchewan cities are looking for a best practice to help them minimize soil damage.”

Associated Engineering's report on this topic emphasized that preparation is the key. The report recommended using measures such as berms, grading and settling ponds to manage the harmful run-off from road snow. The report also recommended establishing permanent rather than temporary dump sites so that better preparations can be made.



PRIORITY 6: Road trench repair

When you drive along a city street, you have no doubt from time to time spotted rectangular lines on the side of the road – the tell-tale signs of a previous trench cut, often made to access below-ground infrastructure and utilities.

Like patching a garment, trench repairs are never really quite perfect. In fact, they have quite high failure rates. Clifton Associates found that the failure rates were often attributable to improper repair work: poor site preparation, poor choice of fill materials and inadequate follow-up.

Clifton's report not only provided guidelines for site preparation, materials and methods but also recommended better accountability procedures for crews doing the repairs.

Clifton also recommended that the best way to minimize repairs was to avoid trench cuts altogether through the use of trenchless technologies.



PRIORITY 7: Trenchless technologies

Repairing water and sewer lines not only involves a steep economic cost but also a significant social cost. Every homeowner or business owner lives in dread of city crews coming to rip up the street in front of their property.

Trenchless technologies are helping to minimize these costs. A number of relatively new techniques allow city crews to slide pipes in and out of small holes on either side of the affected area without the need of digging up the whole street.

Pinter Associates provided CT with an overview of the emerging trenchless repair sector which is achieving a growing market share in North America and around the world.

Although trenchless technologies have been around since the 1980s, in Saskatchewan only a few trenchless projects have been attempted. The Pinter report identifies part of the reason for this as a lack of knowledge among decision-makers about the technology's benefits. As well, there is a relatively small pool of engineers, skilled workers and geotechnical experts in the province with the skills to carry out these projects.

The Pinter report recommends that both decision-makers and public works officials seek out information on trenchless technology and help build the skill base for it in Saskatchewan.

PRIORITY 8: Sludge

It doesn't sound pretty and it isn't: all municipalities face challenges finding ways to deal with the large quantities of sludge and other biosolids that are filtered out through wastewater treatment processes.

Sludge is such a persistent problem for municipalities that CT commissioned Enviseng Environmental Consulting Services to do a two-volume report on approaches for dealing with it.

"We looked at a wide range of processes and technologies for reusing or disposing of sludge. Of course, the best option where possible is to find a way to reuse it such as converting it into fertilizer or topsoil," said Brown.

The report also noted that some municipalities in eastern Canada have had success using biosolids as a biofuel in cogeneration plants.

Gone but not forgotten

Throughout its 10 years of existence, CT created an impressive body of work. It contributed over \$2.4 million to 40 projects that helped to extend the life of municipal infrastructure and reduce costs to government. It also supported the commercialization of private sector projects estimated to generate 75 jobs and \$75 million in revenues over three years.

CT's archive of work and ongoing research projects have been picked up by the Saskatchewan Urban Municipalities Association and other agencies. As well, Brown says, the tools CT created for municipalities will be paying off for taxpayers far into the future.

"Our greatest legacy is the success we had in getting municipalities to work together on common problems.

That's an accomplishment that has unlimited potential since it can apply to a whole range of areas – not just technical problems but also joint procurement or other areas.

My hope is that the work we did in building these collaborations will carry on through the work of our legacy partners," says Bland Brown, P.Eng.

Shooting for a Million: Saskatoon Plans Big

BY MARTIN CHARLTON COMMUNICATIONS

It wasn't so long ago that the entire province of Saskatchewan was having a hard time cracking a million residents. How times have changed. Over the past year, both Regina and Saskatoon issued strategic plans envisioning each city growing to over 500,000 in the next 50 years. But the ink was hardly dry on Saskatoon's plan when city officials discovered that growth trends had overtaken them. The Bridge City now finds itself considering the prospect of a million residents.





The stakes are high for Saskatoon as it faces the challenges of vastly larger infrastructure needs. Roads, water and sewer systems and transit services are all big-ticket items for any city.

A miscalculation could leave future generations struggling with costly and inefficient services. To make sure they get it right, the City of Saskatoon followed a careful step-by-step process to develop a Community Vision document which was then used to inform the new strategic plan developed by City Council.

Step By Step

The Saskatoon officials have been mindful of many examples around the world of cities that have struggled with long-term planning. Even in Canada in recent decades there have been cases of cities that have paid a price for underestimating their potential for growth. Kelowna grew from 20,000 in the 1970s to over 130,000 today which continues to strain that city's roadways. Most famously, Fort MacMurray was ill-prepared for the housing crunch that came when it exploded from 6,000 to over 30,000 in the decade between the 1970s and 1980s.

"Although not quite on the scale of some examples in

Alberta, the growth in Saskatchewan and Saskatoon has been dramatic and unparalleled. For decades in this city we've been used to this steady-as-she-goes, relatively modest growth in population and economy," says Murray Totland, P.Eng., City Manager for the City of Saskatoon.

"Around 2006, that changed. You could feel something different going on, an attitude shift. Since then, we've gone from a population of 200,000 to 246,000 and the pace is getting faster."

"In terms of infrastructure, we are going to be hit on two fronts. First, the growth is going to require new infrastructure to be built on a major scale. At the same time, much of the city's existing infrastructure built in the 1950s and 1960s is nearing the end of its operational life," said Totland.

To ensure that the City of Saskatoon is ready for the future, planners went through extensive preparations. First, the City held public meetings and stakeholder discussions – dubbed the "Saskatoon Speaks" initiative – to develop a community vision.

"It was hugely important. Our engagement process reached over 10,000 citizens and has been noted as best practice in Canada. We hadn't talked about vision and

direction for a long time so we thought it was a perfect time to get people to tell us what they thought was great about the community,”

“The people who participated will be able to see pieces of what they said and contributed reflected in the City’s long-term plans,” said Totland.

Next, using the input from the Community Vision, City Council created a strategic plan to guide growth over the next ten years. The strategic plan includes seven strategic goals including sustainable growth, moving around, and quality of life.

The strategic goal for sustainable growth identified a 10 year strategy to develop an integrated approach to growth. As a result, the City then prepared a high level Integrated Growth Plan (IGP) which includes a set of guiding principles. The IGP outlines a transit, land use, roadway, and water and sewer servicing strategy for the growth of Saskatoon over the extreme long term – into the realm of up to 50 years into the future.

“We realized that the way we’d been planning and building wasn’t going to be sufficient to meet the needs of rapid growth,” says Totland.

“The IGP is a new way of looking at community building processes in our city. We put together cross functional innovation teams that allowed us to broaden the context of the discussion and take a more integrated approach to planning. This was a fundamental shift that allowed us to break through silos. Instead of looking at, for example, transportation and land use as separate items, we planned them in tandem.”

Strategies

Saskatoon’s IGP sets out strategies that, Totland predicts, will redefine the city and its use of infrastructure.

Integrated Communities

The IGP recommends updated principles for constructing new suburban development. Today’s suburbs are, all too often, simply sprawling collections of houses interrupted by the occasional mall or convenience store. Saskatoon’s IGP instead envisions suburbs that are, essentially, communities onto themselves that are nonetheless seamlessly integrated into the wider community.

This would be achieved by:

- building a focal point – a sort of mini-downtown – for each suburb.
- ensuring employment opportunities are zoned into each suburb so that it is not a mere bedroom community.



- planning suburban streets on a “main streets” concept with mass transit and high-density, mixed-use developments in mind.

Infill

One of the greatest risks a city faces from rapid growth is urban sprawl. Run-away urban sprawl causes unnecessary increases in a city’s physical size which increases traffic and infrastructure and complicates public transit.

The risk of sprawl is all the more potent when new development springs up along the banks of a lazily winding river.

A useful urban planning tool for avoiding sprawl is infill development. A city can house more people on its existing land base by filling in any remaining undeveloped lots, building higher-density housing like apartments and condos or rezoning and redeveloping underused commercial land.

“One approach to infill is simply to build higher but it isn’t the only one. For example, the U of S has some surplus lands that could accommodate up to 50,000 people in mixed use residential development. The city yards in North

Downtown could likewise be converted to residential use for 6,000-10,000 people. This would also help us reach our goal of getting more people living downtown to add to the energy, activity and quality of life in that area,” says Totland.

Infill offers many obvious advantages. It potentially allows for more efficient use of existing infrastructure, so fewer new roads or water and sewer lines may need to be built. For those reasons, the Saskatoon IGP recommends offering development incentives to help balance new development with infill development.

“It’s all about achieving balance. It would of course be foolish to say ‘we’re never going to build another greenfield development’ but infill is definitely a useful tool in our planning process.”

But, while it has many advantages, the infill strategy has its own risks. It can create unexpected strains on a local infrastructure that wasn’t built to accommodate that many people. Saskatoon’s IGP therefore recommends a careful, strategic approach to infill including carrying out extensive research to produce infill guidelines.



Transit

Rapid Mass Transit Corridors - Some aspects of Saskatoon’s long-term plans have a “back to the future” flavour to them. After ripping up the old streetcar lines over 60 years ago, the City is now pondering building a new high-frequency rapid mass transit (RMT) system similar to Calgary’s emerging C-Train system. Saskatoon is also considering using express buses as an alternative.

The IGP recommends that the city begin identifying appropriate traffic corridors, right-of-ways, traffic patterns and key destinations. As well, the plan urges that all new neighbourhoods be planned with RMT service in mind.

Reinvent Bus Transit - You might think the IGP’s focus on public transit would include a vastly expanded bus service. That’s not exactly so, says Totland. The IGP actually recommends reducing the number of transit stops.

“We have a tremendous number of stops in the city. The more stops, the more time it takes to get from point A to B. To encourage people to take public transit, it needs to be fast, convenient and reliable which means fewer stops. We are looking at more of a station or hub system, along the lines of the way the airline industry is organized, where people can use a dependable local bus that connects them with the higher frequency, more direct routing of the RMT,” says Totland.

“This would also provide us with opportunities on a regional basis. You could easily see this model be extended to a park-and-ride system for commuters from communities like Martensville and Warman.”

New Roads and Bridges - A quick look at a map of Saskatoon makes one thing very clear: if it’s going to quadruple in size, it’s going to need a lot more bridges.

“Employment growth in the north end of Saskatoon is going to continue and when combined with major residential development areas in the northeast, the need for new bridges and roads becomes obvious,” says Totland.

“Our previous long-range transportation forecasts showed we would need two new bridges to serve a population of 250,000. We are very nearly at that population number so we need to catch up with bridge building. The Circle Drive South crossing is very nearly done and will take care of one of those. City Council also recently approved the construction of a proposed new North Commuter Parkway Project with a new north river bridge, and we’ve just started the procurement process for that.”

Bridge building initiatives won’t only happen at the city’s outskirts, Totland says.

“We are also going to have to take a look at river traffic in the core area. If we are going to have a RMT going across the river, we will probably need an additional bridge in the core area of our city to accommodate it. But we’re still in the early stages of studying that.”

When it comes to the road system, the IGP once again has interesting “back to the future” observations.

“We’re taking a second look at previous models for building neighbourhoods. We’re even going to take a second look at a modified grid road system,” Totland says.

“If you look at pre-war neighbourhoods, they were built for walking and ease of access, with many connections between neighbourhoods. Since then, the road system has

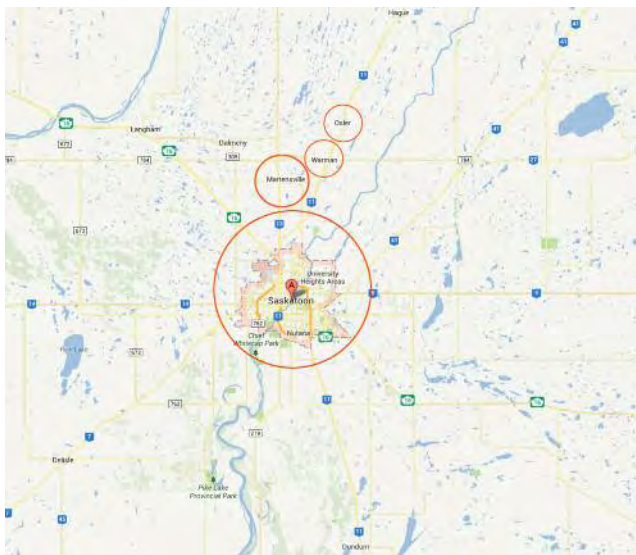
mainly divided neighbourhoods, leaving them cut off from one another.”

Instead, Totland sees future neighbourhoods built with better access to services in their own area, better connections among them and, above all, better access to public transit.

“If we are going to give mass transit a fighting chance against the automobile, we have to get people living closer to major mass transit routes.”

Funding Strategies - Long-term urban planning is a daunting task. It can be difficult to keep politicians and the public on board when the short-term approach often superficially appears cheaper and easier. Certainly, Totland admits, an extensive revamp of the city’s infrastructure strategies will not be cheap but it will pay off in the long run.

“One of the biggest challenges is with infill – encouraging developers to redevelop brownfield sites that might not have sufficient infrastructure. We’ll have to be more creative and come up with some more tools to make infill development more attractive.”



Growing Together

Saskatoon isn’t the only community in north central Saskatchewan to face sudden growth. The communities of Martensville and Warman recently graduated from being towns to cities and other nearby towns have also seen their populations spike.

Saskatoon is planning ahead for the implications of regional growth by examining shared services. Saskatoon is in discussions to share wastewater services with Martensville, Warman and Osler and is also keeping those communities in mind for its long-term transit plans.



More to Come

Saskatoon’s 2012 IGP was drawn up with the population target of 500,000 in mind but recent trends have caused city planners to feel even this number is too conservative.

“We recently received our June 2013 population estimates which showed that Saskatoon appears to have grown by 10,000 residents in one year. That’s a phenomenal growth rate – perhaps the highest growth rate in the country – and it will require us to rethink all of our assumptions,” said Totland.

As part of these preparations, the City recently released a map showing a vastly expanded area which could define a future urban boundary to meet a regional population of 1 million people. The proposal is conceptual at this point and is going to need substantial discussion with the city’s partners in the region. It may generate some controversy, but Totland is confident that the City can work through the collaborative process.

“We need to work collaboratively to face challenges and maintain a good quality of life for everybody. Everyone’s objectives are the same and just need to work towards that goal. Strong partnerships will lead to a prosperous and sustainable future. That is the vision. ”

Member Profile



This month *The Professional Edge* chats with Jason Hydomako, P.Eng. a civil engineer who works as a project manager/engineer with IWL Steel Fabricators.

Tell us about your personal and professional background.

I was born and raised in Saskatoon. I went to school at E.D. Feehan and studied engineering at the U of S.

Your biggest challenge in college?

I suppose it would be striking a balance between sports and school. I was a competitive soccer player. But then I ended up needing knee surgery and never did get to play with the U of S team.

What was your first job after college?

I worked for Graham Construction and Engineering out of college. I worked up at the uranium mines primarily. It was a challenge living in the camps and being away from family. But once you build something up there, it is easy to build anything anywhere else.

Single greatest accomplishment as an engineer?

There have been so many great projects it would be hard to pick one. Coordinating the construction of the Dakota Dunes Casino was a big one. I was also very proud of the work we did on the PCS Allan debottlenecking in 2006. Our work there shaved about a month off the client's schedule.

What are your interests outside of work?

I still enjoy soccer – but as a coach. I coached my son's teams all the way until he was 18. I'm now coaching a premier girls teams which has been an interesting challenge. It's new and exciting and very different from boys teams. Motivating the two groups is quite different.

I also like to spend time volunteering through the Saskatchewan Industry Education Council and the Saskatchewan Youth Internship Program. I donate a good deal of time to talking to students about staying in Saskatchewan and considering professions in construction and other trades.

What is your favourite vacation spot?

I don't like to go to the same place twice. I'm always looking for new vacation spots. One of our trips that stood out to me was Puerto Rico. It has a rich history and culture, and old San Juan is very beautiful.

One place I've been to more than once – although not always on vacation – is northern Saskatchewan. I would invite everyone in Saskatchewan to visit the north. It's absolutely gorgeous up there yet probably half the population of the province has never been there.

The greatest influence on your life and career?

In terms of my life, I'd say my grandparents. They made me who I am and gave me my work ethic and sense of loyalty.

On the career side, I couldn't name anyone specifically because I've been lucky to have so many – probably a dozen or more – great mentors who have helped me and inspired me to work harder.

APEGS View



Greg Vogelsang, P.Eng., P.Geo. Geoscientists Canada President

On June 1 at the 16th Annual Meeting of Geoscientists Canada, Greg Vogelsang P.Eng., P.Geo., took office as President for 2013-2014.

Vogelsang resides in Regina, where he provides professional environmental management consulting services to Western Potash Corp.

He is a graduate of the Northern Alberta Institute of Technology and the University of Regina (B.Sc. - Geology). He is a registered Professional Geoscientist and Professional Engineer in Saskatchewan and Alberta. His professional career includes 15 years as a consultant to a western Canada consulting firm and seven years as a mines inspector with the Saskatchewan Ministry of Environment.

Greg previously represented Saskatchewan on the Board of Directors of Geoscientists Canada. In fulfilling his duties as President, Vogelsang will be focusing his attention on concluding work directed at the strategic objectives for the organization as set by the Board of Directors of Geoscientists Canada in its 2010-2015 strategic plan.

He also looks forward to working with the constituent associations and other stakeholders in developing a new strategic plan for the organization that will guide its activities for the remainder of the decade and beyond.



Jim Beckett, P.Eng., FEC Engineers Canada President

Engineers Canada is pleased to welcome W. James Beckett, P.Eng., FEC, as its president for the 2013–2014 term. Mr. Beckett will lead the Engineers Canada Board in support of the provincial and territorial engineering regulatory bodies, representing the over 250,000 members of the profession, to build a stronger engineering profession and to increase Canadian's awareness of the contributions of engineers to society.

Beckett was born and educated in Edmonton. He attended the University of Alberta, where he obtained a B.Sc. (with distinction) in electrical engineering. He was a member of the university's Board of Governors, the University Senate, the university's Engineering Advisory Board and has been the Alumni Association's president, vice-president and faculty advisor.

Jim retired in his 37th year of working with the ATCO Utilities Group, rising to the position of executive vice-president, regulatory and chief regulatory officer, and is now principal at Beckett Consulting.

He is a life member of the Association of Professional Engineers and Geoscientists of Alberta, was the association's president in 2009 - 2010 and has represented the association on the Engineers Canada Board since 2010. He has been a member of numerous Engineers Canada committees and is currently a Board representative on Engineers Canada's Canadian Engineering Accreditation Board.

In Memoriam

Mervin L. Bailey, P.Eng.
H. Keith Bowers, P.Eng., FEC
D. Harry Filson, P.Eng.
Robert G. Kerrich, P.Geo.

Barry A.L. Lahey, P.Eng.
Herbert I. Langley, P.Eng.
Dennis J. Nikols, P.Geo.
Marvin J.C. Pflug, P.Eng.



U of R Engineering Management MBA

The Kenneth Levene Graduate School of Business recently announced the launch of its new Levene MBA in Engineering Management. The program is designed to provide professionals working in engineering contexts with core business skills that will enable them to excel and lead as part of an executive team.


The MBA Engineering Management specialization teaches students the fundamentals of business with a focus on technology intensive industries – offering industry specific training in project management, economics and business law plus risk management. The degree incorporates an international study tour which meets with a variety engineering firms.

Engineer Honoured for Environmental Work

Mike Nemeth, P.Eng. recently received the Saskatchewan Eco Network Environmental Activist Award.

A mechanical engineer originally from Yellow Creek, Mike has volunteered for the We Are Many organization for a number of years. Mike has been integral to getting Energy Efficiency Codes for Buildings on the provincial government's agenda by helping plan a one-day session linked to the Building Saskatchewan Green conference in 2012.







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Civil				
Foundation Design	03-0425-2268	Regina	October 16-18	21
Electrical				
Electrical Power Distribution Engineering	04-0917-2280	Regina	September 17-19	21
Grounding and Bonding of Electrical Systems	04-1027-2280	Regina	October 1-2	14
Environmental				
The Future of Air Emissions Management	04-1029-2280	Regina	October 10-11	14
Construction				
Interpretation and Enforcement of Construction Contracts	04-0919-2280	Winnipeg	September 16-18	21
	04-1028-2280	Regina	October 7-9	21
Construction Liens: How to Avoid the Perils and Minimize the Risk	04-1031-2280	Winnipeg	October 10	7
Mechanical				
Pumps and Compressors: Selection, Operation, and Maintenance	04-0918-2280	Regina	September 18-20	21
Webinars (All times are in EDT)				
50+ Data Visualization, Mapping and Graphic Design Tools for Engineers	0903-WEB13	12:30 - 1:30 pm	September 18	
Communication Skills	1001-WEB13	12:30 - 1:30 pm	October 15	

*PDHs: Continuing professional education for licensed engineers is measured in Professional Development Hours (PDHs). A PDH is one contact hour of instruction or presentation.





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APEGS Recognizes the Top Engineering and Geoscience Graduates

Every year, the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) recognizes engineering and geoscience graduates at the University of Regina and University of Saskatchewan for outstanding academic achievements and leadership. Meet the next generation of innovation.

Congratulations 2013 Gold Medal Recipients!



Ye Zhou is the 2013 APEGS Gold Medal recipient for Engineering at the University of Regina

Ye Zhou graduates from the University of Regina with a Bachelor of Science in Environmental Systems Engineering (Great Distinction). Her academic career has been highlighted by numerous awards: two APEGS Book Prizes, two Academic Gold Scholarships, Dean's Honour List five times, Saskatchewan Innovation Undergraduate Scholarship, SED Systems A Division of Calian Ltd Scholarship, Simon Yu Bursary and Academic Silver Scholarship.

Ye's final project examined disinfection byproducts in drinking water. Her group represented the U of R at the 2013 Canadian Society of Civil Engineering Conference Capstone Competition. Ye also served on campus as a Student Administrative Assistant in Parking Services and as a Resident Assistant in College West Residence. She headed a successful 2012 AIDS Fundraiser for CANFAR and also volunteered for the U of R Ambassador Program, Career Center and Science Department.



Richard Boulding is the 2013 APEGS Gold Medal recipient for Geology at the University of Regina

Richard Boulding is graduating from the University of Regina with a Bachelor of Science (Honours) in Geology. He has been the recipient of numerous awards and scholarships including the Terry Fox Humanitarian Award, the John Lewry Award in Geology, the Geological Association of Canada student prize, and more. Richard has spent his summers as a geological assistant for the Saskatchewan Geological Survey and a paleontological assistant at the Royal Saskatchewan Museum and the Peace Region Paleontological Research Centre. He is currently pursuing his master's degree in geology at the U of R in the fields of paleontology and sedimentology. In conjunction with the Royal Saskatchewan Museum, he is undertaking a wide scale examination of the fauna and depositional environments of the Eastend Formation across Saskatchewan.



Ashton Cole Bretzer is the 2013 APEGS Gold Medal recipient for Engineering at the University of Saskatchewan

Ashton Cole Bretzer is graduating with a Bachelor of Science in Chemical Engineering from the University of Saskatchewan. He has been on the Dean's Honour Roll every year he has attended the U of S and has won several awards. These awards include the Canadian Society for Chemical Engineering Award, Flint Energy Services Ltd. Scholarship, University of Saskatchewan Scholarship, University of Saskatchewan Undergraduate Scholarship, two APEGS Book Prizes, University of Saskatchewan Chancellor's Scholarship, the Governor General's Academic Bronze Medal and several others. He is also a member of the Greystone Scholars Society and the Golden Key International Honour Society. He has a strong interest in the oil and gas industry and has completed two summer work terms with Cenovus Energy.



Andrew May is the 2013 APEGS Gold Medal recipient for Geology at the University of Saskatchewan

Andrew May obtained a Bachelor of Science (Honours) in Geology from the University of Saskatchewan. Throughout his four years he has been awarded with the Walter Kupsch Award as well as scholarships from Cameco, Areva and Teck. In addition to these achievements, Andrew was also a member of the Greystone Scholars Society. On top of his academic achievements, Andrew also gained relevant experience through his work terms with the Saskatchewan Geological Society and Areva Resources Canada. Following the completion of his degree Andrew hopes to work as part of an exploration team in the field of oil and gas or mining.

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Council Notes

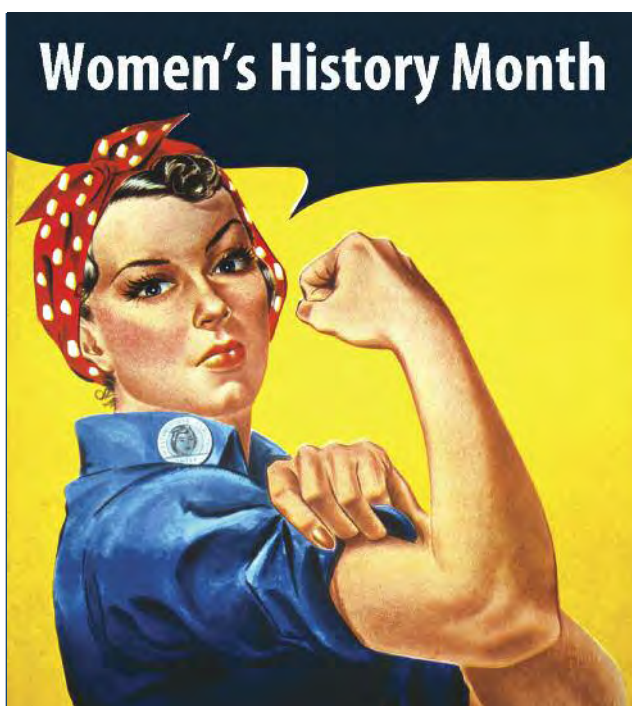
June 14, 2013, Temple Gardens Mineral Spa, Moose Jaw, SK

18 of 19 Councillors present

- The terms of reference for an audit committee were adopted by Council.
- Council was advised of the following appointments by the Governance Board: E. Ferguson Earnshaw, Engineer-in-Training, Xiang (William) Liu, P.Eng. and Nancy M. Normore, P.Geo. to the Experience Review Committee for three-year term; Kevin McCullum, P.Eng., Ondiveerapan Thirunavukkarasu, P.Eng. and Doug Wagner, P.Eng. to the Academic Review Committee for a three year term; Sami Jasem, P. Eng. and Syed Naqvi, P.Eng. to the Professional Practice Exam Committee for a three year term.
- Council appointed Doug Kelln, P.Eng. as Chair of the Professional Practice Exam Committee for a two-year term.
- The following were approved for Life Membership: Sukhdev S. Brar, P.Eng.; Everett J. Kearley, P.Eng. and Davida N. Velichka, P.Eng.
- Council was advised of the following appointments by the Image and Identity Board: Deb Rolfes and Robert Schultz, P.Eng. to the Professional Edge Committee for a three year term; Zuri Epp, P.Eng. to the Communications and Public Relations Committee for a three year term; Rob Stables, P.Eng., John Desjarlais, Engineer-In-Training, Bruce Lotts, P.Eng., P.Geo., Lal Kushwaha, P.Eng., FEC and Cathy Starkell, P.Eng. to the Equity and Diversity Committee for a three year term.
- Council appointed Gerry Hertz (Public Appointee) as a member of the Investigation Committee.
- Council re-appointed Nicola Banton, P.Eng., Erin Moss, P.Eng., and appointed Mary Anderson, P.Geo., Alan Duff, P.Eng. and Peter Jackson, P.Eng., FEC to the Investigation Committee for a three year term.
- Ian Flegel, P.Eng. is the new Chair of the Discipline Committee. The Committee appoints its own Chair and Vice-Chair in accordance with the Regulatory Bylaws.
- Council appointed Dwaine Entner (Public Appointee) as a member of the Discipline Committee.
- The proposed concept for relocation of the APEGS office and authorization for staff to proceed with final negotiations and planning for relocation to the Harbour Landing Business Park was endorsed by Council.
- An update on the planning for the 2014 conference of the Canadian Coalition of Women in Engineering,

Science, Trades and Technology (CCWESTT) was provided. The 15th biennial conference will be held May 22 - 24, 2014 at the Delta Hotel in Regina.

- The next Council meeting is scheduled for October 10-11, 2013 in Saskatoon. There will be a meeting with the Past Presidents on October 10.



Call for Sponsors

Women's History Month

Each October, APEGS proudly sponsors the Women's History Month reception held in Regina.

Women's History Month is a celebration of the contributions of women to Canadian society and recognition of the achievements of women from all walks of life as a vital part of our heritage.

This event is made possible each year through sponsorship. If your organization would like the opportunity to be recognized at this year's event, please contact Barbara Miller for sponsorship opportunities at Barbmiller@apegs.sk.ca or (306) 525-9547.



Call for Awards Nominations

The Awards Committee is seeking nominations for the APEGS Awards as well as other provincial and national awards such as the Saskatchewan Order of Merit, the Order of Canada, the Canadian Engineers' Awards (Engineers Canada) and the Canadian Professional Geoscientist Award (Geoscientists Canada).

If you know of a professional engineer or professional geoscientist who should be considered for an award, or an exceptional engineering or geoscience project that should receive an award, the committee would like you to nominate that member or project. There are seven APEGS awards: the **Brian Eckel Distinguished Service Award**, the **Outstanding Achievement Award**, the **McCannel Award**, the **Promising Member Award**, the **Friend of the Professions Service Award**, the **Exceptional Engineering/Geoscience Project Award** and the **Environment Excellence Award**.

Criteria for each of the awards are contained in the nomination form that appears on the next page.

In addition to the APEGS Awards, the Awards Committee nominates APEGS members for awards presented by both Engineers Canada and Geoscientists Canada.

Nominations for awards must be received by November 30 to provide time for the Awards Committee to review and consider the nominations for the annual APEGS Awards and to prepare nomination packages for provincial and national awards. The Awards Committee will develop and maintain a list of nominees for consideration for the various awards.

Nomination form on following page.

Please send nominations to:

APEGS Awards Committee
104, 2255, 13th Avenue, Regina, SK S4P 0V6
Fax: (306) 525-0851 or Email: apegs@apegs.sk.ca

Nominations for APEGS Awards

Do you know an individual or a group who should be considered for an award?

I would like to nominate:

In the following category:

Brian Eckel Distinguished Service Award

Accomplishments in Engineering/Geoscience (35%). Service to the professions in public education and/or active participation in engineering/ geoscience associations, societies, institutes (35%). Service to community (30%).

Outstanding Achievement Award

Accomplishments in Engineering/Geoscience (70%). Service to the professions in public education and/or active participation in engineering/geoscience associations, societies, institutes (20%). Service to community (10%).

McCannel Award

Accomplishments in Engineering/Geoscience (20%). Service to the professions in public education and/or active participation in engineering/geoscience associations, societies, institutes (70%). Service to community (10%).

Promising Member Award (available to any member who has held P.Eng./P.Geo. for less than 5 years)

Accomplishments in Engineering/Geoscience (50%). Service to the professions in public education and/or active participation in engineering/geoscience associations, societies, institutes (25%). Service to community (25%).

Friend of the Professions Service Award (available to anyone who is not a member of APEGS)

Recognizes contributions by an individual or a group in the support and promotion of the professions (100%). Examples of activities include: documentation of the history of the professions; comprehensive media coverage of an outstanding engineering or geoscience achievement; long-time service on an APEGS committee or other form of contribution to the success of activities promoting the professions to the public.

Exceptional Engineering/Geoscience Project Award

Accomplishments in Engineering/Geoscience (100%). The project team must be made up predominantly of Saskatchewan engineers and/or geoscientists. The project may be located inside or outside of Saskatchewan. The award will be granted when the efforts of an individual or team of engineers/geoscientists is deemed to be of great significance.

Environmental Excellence Award (all professional members of APEGS are eligible)

Environmental awareness, preservation, protection and reclamation through education, leadership and/or involvement (25%). Enhancement of quality of life by improvement of the physical or social environment through engineering, geoscience or other works (10%). A real extent of environmental protection or preservation as a result of the efforts (50%). Prevention of potential environmental impacts vs. correction/remediation of existing impacts (15%). This award is intended to have broad scope, and be open to a wide range of projects, achievements, initiatives and activities contributing to the protection and preservation of the environment.

I am nominating this person / project because (25 words or less):

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Other references (professional and community service related) to contact include:

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Submitted by:

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Consulting Engineers of Saskatchewan (CES) AGM & Golf Tournament

CES hosted a strong representation of members at its Annual General Meeting and Golf Tournament at the Harbour Golf Club and Resort in Elbow, SK on May 31, 2013.



CES Golf Tournament Winners – Lowest Score (63) - Stantec Consulting Ltd. (l to r) Brad Zurevinski, P.Eng. Devin Clarke, RPP, MCIP and Grant Campbell, E.I.T. Team member missing from photo, Eric Langevin, E.I.T.



Consulting Engineers of Saskatchewan (CES) immediate Past Chair Mel Leu, P. Eng. (right) extends congratulations to new Chair Jason Gasmu at the association's AGM.

CES would like to acknowledge and thank this year's major Golf Tournament sponsors.

Their generous contributions ensure the success of this Annual Event.

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Consulting Engineers of Saskatchewan

New Leadership of Board of Directors



Effective May 31, 2013, Jason Gasm, P.Eng., assumed the Chair of Consulting Engineers of Saskatchewan (CES). He is joined by Stormy Holmes, P. Eng. as Vice Chair and Tara Reichert, P.Eng., as Secretary Treasurer.

These individuals will lead the 2013-2014 Board of Directors composed of Past Chair, Mel Leu, P.Eng. and Directors Bryan MacFadden, P.Eng., Jeffrey Halliday, P.Eng., Marvin Loewen, Engineering Licensee, PMP, Paul Walsh, P.Eng., and Tim Magus, P.Eng. Additional contributors are Brent Wolfater, P.Eng., Young Professionals Liaison, Jason Mewis, P. Eng., ACEC|Canada

Liaison, Leon Botham, P. Eng., APEGS Liaison and Shane Baillargeon, MBA B.Comm, Associate Member Liaison.

CES is a non-profit association representing the business interests of Saskatchewan consulting engineering and consulting geoscience firms. CES's mission is to promote the growth and prosperity of member firms, enhance the image of our industry, positively influence decision makers and provide valuable member services. As the business voice of the consulting engineering and geoscience industry in Saskatchewan, CES is the link between private industry, government, purchasers, decision makers and owners.



CES member new Chair of National Organization

Consulting Engineers of Saskatchewan (CES) is pleased to announce Jason Mewis, P. Eng., was elected 2013-2014 Chair of

The Association of Consulting Engineering Companies Canada (ACEC) at its Annual General Meeting in Lake Louise June 21, 2013. As Chair, Mewis becomes the public face of the association, representing nearly 500 independent consulting companies across Canada.

The Saskatchewan born and educated engineer has over 15 years of experience working on projects for the heavy industrial market in Saskatchewan and beyond, as both a Senior Structural Engineer and Project Manager. In 2004 Mewis started ENGCOMP Engineering & Computing Professionals Inc. in Saskatoon. As his company grew, so did his active promotion of the consulting engineering industry and the contribution the profession makes to every aspect of society.

Mewis has been an active member and proponent of CES for the past seven years, serving on its Board of Directors and representing the Saskatchewan association at the national level as ACEC Liaison for the past five years. He will retain his ACEC liaison responsibilities on the CES Board.

New CES Chair, Jason Gasm, P.Eng. acknowledges the contribution Mewis will make during this term as ACEC Chair.

"In my time with the CES board, Jason's level of commitment to the board, association, and member firms has become very clear. He has great insight into the needs of the industry, and he will be a strong asset for ACEC Canada to have as Chair of its board. I look forward to continuing to work with Jason through his term as our ACEC Liaison because I feel there is good opportunity for progress under Jason's focus and energy," said Gasm.

Beverly MacLeod, CES Executive Director, addressed the significance of this election following Mewis's installation.

"The Saskatchewan consulting industry has grown in parallel with the provincial economy. Throughout this growth period, Jason has been an advocate and a promoter of our provincial and national associations. It is fitting that his new role is an acknowledgement of his success in our growing economy. I know he will continue to meet upcoming industry challenges as a true leader," said MacLeod.

News Beyond Our Borders



More Women in Engineering

Statistics Canada's National Household Survey shows that almost 60 per cent of young adults aged 25-34 who possessed a university degree were women. Young women also held a higher share of university degrees among those who graduated from science, technology, engineering and math (STEM) programs. In 2011, 2,196,200 adults had a postsecondary certificate, diploma or degree in science and technology, engineering and engineering technology or mathematics and computer sciences. They represented 18.6 per cent of all fields of study. Women overall represented just under one-third of adults aged 25-64 with a university STEM degree.

"The increase of young women getting STEM degrees is encouraging," said Kim Allen, FEC, P.Eng., chief executive officer of Engineers Canada. "It's a definite shift in higher education. Both the engineering profession and the public will benefit from a more diverse perspective and the profession will be more reflective of the make-up of Canadian society."

Source: Engineers Canada

PEO Encouraging Members to Seek Political Office

Professional Engineers Ontario (PEO) continues to pursue its goal of getting more of its members into elected office.

Jeannette Chau, P.Eng., PEO's manager, student and government liaison programs, noted that China's Politburo Standing Committee in 2009 was made up of eight engineers and one lawyer. By contrast, the last US president to train as an engineer was Herbert Hoover.

"There is a prevalence of lawyers in the US ruling elite. Over half of American senators have practised law. China is emerging as a superpower. Its long-term view and focus on technology – good engineering traits – may give it a global advantage in today's increasingly technical society," Chau wrote.

Chau noted that public office fits well with an engineer's job of ensuring public safety.

"Having politicians with an understanding of regulatory issues and what PEO is trying to accomplish goes a long way in helping to foster the relationships PEO needs with government, and in helping make the best fact-based decisions our country needs. More balance in the viewpoints and backgrounds around the political table will allow for better decision making."

In the 2011 Ontario provincial election, PEO had a desire to have 11 professional engineers elected to the Ontario legislature in the 2011 provincial election. Although 11 ran, only six ran as candidates for parties currently in the legislature and only three were elected.

Source: Professional Engineers Ontario

Québec Welcomes Anti-Corruption Bill

The Ordre des ingénieurs du Québec (OIQ) stated that it was "satisfied" with the tabling of Bill 49, which paves the way for an extensive review of *The Engineers Act*.

"At a time when the engineering profession is grappling with a confidence crisis, [the government] is showing its support for the Ordre des ingénieurs du Québec and its desire to help it better fulfill its mission of protecting the public by tabling this bill. Every effort made to clarify the OIQ's powers is good news," explained Daniel Lebel, Eng., FEC, PMP, President of the Ordre des ingénieurs du Québec.

The bill identifies the specific activities of engineers as they apply to engineering works such as buildings, structures and infrastructures, energy systems and industrial processes. It stipulates that engineers should be involved in the practice of such activities based on the risk to the public.

The Ordre also welcomed measures that will make it mandatory for engineers to supervise engineering works.

“Engineer supervision is very important to ensure that engineering works are built in accordance with plans and design specifications and that nothing jeopardizes their reliability,” an OIQ press release stated.

Source: Ordre des ingénieurs du Québec

Newfoundland Adopts Limited Licensure

Professional Engineers and Geoscientists Newfoundland and Labrador (PEGNL) announced at its June Annual General Meeting in Gander that it is now receiving applications for limited licenses to practice engineering or geoscience.

A limited license to practice engineering or geoscience enables limited licensees to practice engineering or geoscience in a personally specified limited area of practice. Typically, to qualify for a limited licence a person would require a diploma from a technical college or university satisfactory to the Registration Committee, and have at least eight years of experience including a minimum of four years within the area of the limited scope.

Limited licenses would be entitled to call themselves a professional member in the practice of engineering – limited license, a professional member in the practice of geosciences – limited license, and use the designation Eng. L. or Geo. L. and to have a limited licensee stamp. Licensees would not be permitted to call themselves a professional engineer or professional geoscientist or to use the designations P.Eng. or P.Geo.

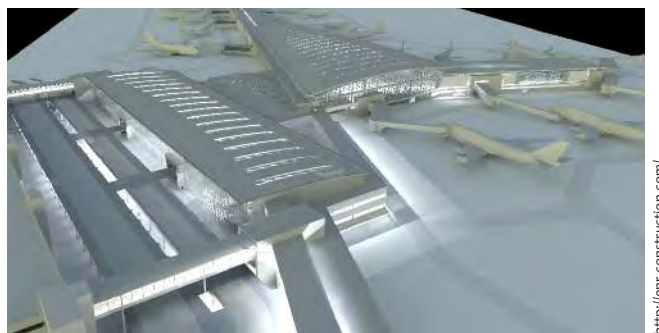
Limited licensees may vote in PEGNL elections and may be elected to serve on the PEGNL board of directors, well as serve on committees.

Source: Professional Engineers and Geoscientists Newfoundland and Labrador

Tunnel and longest runway under way in Calgary

The Transportation Business Group of CH2M HILL in Calgary is working on two major infrastructure projects around the Calgary International Airport – a runway expansion and a 620-metre long tunnel that will allow vehicular traffic en route to the airport to physically pass underneath the new runway.

The Airport Trail tunnel project is estimated to cost \$295-million. The tunnel will increase access to the airport for vehicles travelling from south or east allowing motorists to avoid Deerfoot Trail, an inner-city expressway that is currently over-capacity and therefore an unpredictable route often at a standstill during peak periods.



<http://enr.construction.com/>

The second project is the Calgary Airport Authority’s runway expansion program. The new, and much longer, runway and taxiways will travel directly over top of the tunnel. The runway will be 14,000 feet long making it the longest civil aviation runway in Canada, surpassing the existing runway at 12,670 feet.

Once complete, it will allow air traffic controllers to operate both runways simultaneously, increasing air traffic considerably in and out of the city.

Currently, the longest runway in North America is in Denver at 16,000 feet. For cities that are considerably above sea level, extended runways are necessary for larger aircrafts, such as the Airbus A380, to take-off and land.

Both projects are well on their way to meeting the next round of milestones, although either their timelines or budgets may be hampered by recent flooding in Calgary. At present, the project is expected to conclude by May 2014.

Source: Canadian Consulting Engineer magazine

APEGM Youth Program Passes 30K Mark

The Association of Professional Engineers and Geoscientists of Manitoba (APEGM) reached an important milestone with its long-running youth outreach program. The WISE (Women in Science and Engineering) Kid-Netic Energy program was established in 1990 at the University of Manitoba. APEGM announced that in 2012 the program connected with over 30,000 students from kindergarten through grade 12. The program reaches students in a wide variety of communities including northern Manitoba, First Nations communities, rural areas and throughout Winnipeg.

The program employs 80 female instructors who are pursuing degrees in science and engineering. One of WISE Kid-Netic’s specialties is its girls clubs program. Participants in grades 3-7 meet for 18 three-hour sessions during the school year. These sessions provide environments for girls to further develop their love of learning through field trips and mentorship opportunities.

Source: Association of Professional Engineers and Geoscientists of Manitoba

News From The Field



Saskatchewan will need \$20-\$30B a year in capital investment

Regina Leader-Post - Saskatchewan will need to attract \$20-\$30 billion in capital investment annually for the next 20 years to finance its rapid economic and infrastructure growth, according to a Conference Board of Canada report.

How well the province manages this unprecedented demand for capital will largely determine whether or not Saskatchewan achieves its maximum growth potential, said the study, entitled *Green Machine: Financing Growth in the New Saskatchewan*.

About \$38 billion in capital projects are currently underway, largely financed by multinational, out-of-province companies, with mining projects accounting for about 40 per cent of the work. But the province will require capital investment of \$20-\$30 billion a year over the next two decades (2013 to 2032) to keep up with demand for oil and gas, mining and public infrastructure spending.

"This is not another commodity cycle. The force driving higher returns to crops and potash are real and long term," the study said, noting that global population is expected to grow by 36 per cent by 2050, which will require another 945 million tonnes of cereal grains and 200 million tonnes of meat.

In addition to the capital demands of extractive industries, like oil and gas and mining, demand for public infrastructure, like roads, water and sewage treatment facilities, will also increase as the population grows to 1.4 million by 2035, the study said.

UNIVERSITIES AND RESEARCH

Coming soon: U of S mining engineering classes

Saskatoon StarPhoenix - Students at the University of Saskatchewan (U of S) will soon be able to register for mining engineering courses.

The International Minerals Innovation Institute (IMII) in Saskatoon announced a \$1.67 million donation to the U of S to allow the school to offer five new mining courses.

"It allows us to hire new faculty members immediately so we can deliver new courses that we've never had before," said Ernie Barber, P.Eng., acting dean of the College of Engineering.

"It gives us the resources to do something we might get around to eventually, but it allows us to do it quicker."

The university will hire three new faculty members who specialize in mining engineering and will look to develop programs alongside the Saskatchewan Institute for Applied Science and Technology.

Barber hopes to see new mining courses offered by September 2014.

The IMII is a non-profit organization that invests in mining education and research. It was established last year and is funded by the mining industry and government.

Under a three-year funding agreement the university will work closely with the mining industry and the province. After that, the organization hopes the university will be able to run a mining engineering program without assistance from the IMII.

Synchrotron signs deal for composites research

CTV Saskatoon - The Canadian Light Source synchrotron at the University of Saskatchewan is entering a new partnership which could affect research on everything from airplanes to automobiles.

The synchrotron has signed an agreement with the Composites Research Network to provide expertise in developing new materials for production in various industries including manufacturing, automotive, agriculture and recreational vehicles.

The research will include looking at how to produce lighter but stronger materials — particularly for the aerospace sector — and improving composite structure mechanical properties.

Auditor tells U of R to fix research rules

Canadian Press - Saskatchewan's auditor says the University of Regina doesn't have enough control over some of its research operations and that could hurt the university's core function and reputation.

She made 26 recommendations to improve oversight and policies for research projects.

One suggestion is that the university make expectations more clear with more detailed performance measures and targets.

Lysyk also says the university should regularly review research policies, many of which she notes have not been updated in several years.

The audit did not look at how research money was administered — the university had nearly \$23 million of research revenue in 2011-2012.

The university asked for the auditor's review in large part because questions were raised about how more than \$2 million was spent at the university-based International Performance Assessment Centre for the Geologic Storage of Carbon Dioxide, commonly known as IPAC-CO₂.

U of S engineering team garners attention

CTV Saskatoon - Four engineering students at the University of Saskatchewan put their fully-functioning quarter-scale tractor up against schools from across North America and held their own against the competition in Peoria, Illinois.

"We did very well in maneuverability and in a lot of the design judging. So that's servability, manufacturability, ergonomics, safety, those types of things," said team member and fourth year engineering student, Devin Barros.

The 29 teams, from Canada and the US went head to head in four categories, pulling performance, team presentation, design judging and written report. And the team from the U of S were challengers in all areas. The team from Saskatoon has finished in the top five for more than five years.

Team leader Terry Fonstad, P.Eng., says the school's consistent high showing in the competition is starting to generate attention in the agriculture manufacturing industry.

"I was helping the students and I turned around and here's representatives from John Deere wanting to interview students for H.R. purposes," said Fonstad. "That's a big deal when you get Caterpillar and Deere and those companies starting to pay attention to our school. To say that's where good quality students come from, you know the program is working."

The school's latest miniature tractor will be showcased at events over the next few months to help raise money for students involved in next year's competition.



U of S students build SAE race car

CKOM - Engineering students at the University of Saskatchewan have designed a Formula SAE (FSAE) race car that will compete with other universities.

"It handles on a dime, brakes are great, engine is responsive, it's excellent" said third year mechanical engineering student Dave Murray after completing a few laps around campus.

The small car was built and designed entirely by students. The engine is from a 600 cc Honda motorcycle, the frame was welded by hand and suspension and brakes are custom pieces.

"In engineering they say you can have friends, you can have school work or you can have sleep, pick two out of three," Murray said with a laugh.

"We add this onto that. We don't get a lot of sleep but we have a lot of fun. It's just our passion," the 20-year-old said.

The cars are not geared for top speed, because of safety reasons, but acceleration is the goal. This year the car is 10 pounds lighter and has more horse power.

INFRASTRUCTURE

Ceres breaks ground at Northgate

Estevan Lifestyles - The Ceres Global Ag Corp has broken ground on the commodity logistics hub at Northgate, and site preparation by is now under way.

The planned commodity logistics hub is being built on 1,500 acres of land owned by Ceres.

It is expected to include a grain handling and shipping facility, along with an area for loading and shipping oil.

When complete, the Northgate commodity logistics hub will connect to BNSF Railway's United States rail network.

The initial site preparation phase is funded equally by Ceres and the Scouler Company. Scouler is the major US -based agricultural marketing company that, subject to reaching a final agreement, intends to fund and own the hub's grain operation.

Initial grain and oil shipments are expected to begin later in 2013.

The total capital cost for the project is budgeted at \$90 million. Ceres plans to build the facility over three years and has designed it to ultimately handle up to 40 million bushels of grain annually and 70,000 barrels of oil per day.

The project is expected to create more than 100 construction jobs and about 30 ongoing jobs once the facility is fully operational.

URANIUM AND NUCLEAR

Regulatory blessing for Cigar Lake

World Nuclear News - Cameco's Cigar Lake project has a uranium mining licence from the Canadian Nuclear Safety Commission (CNSC) that clears the way for the start of production at the northern Saskatchewan site.

Cameco sought authorization to complete the final stages of commissioning, the transition into operations and for shipping uranium ore slurry for further processing.

The CNSC held a one-day public hearing on the application in April during which it considered submissions from Cameco and 11 intervenors as well as recommendations from the regulator's own staff.

The newly granted licence authorising the construction and operation of the project will be valid from July 1, 2013 to June 30, 2021.

Cameco president and CEO Tim Gitzel said the company was pleased with the regulator's decision.

"This licence will allow Cameco to advance the Cigar Lake project into production and shows Canada's nuclear regulator has confidence in our team," he said.

The company plans to begin production by jet boring ore this summer. Ore from the mine is to be processed at Areva's McClean Lake mill, and the first packaged yellowcake is expected in the fourth quarter of the year.

Cigar Lake is the world's second largest high-grade uranium deposit, with grades that are 100 times the world average. The orebody is being frozen prior to mining to improve ground conditions, prevent water inflow and improve radiation protection.

The ore will be removed by a jet boring system, using water under high pressure to carve out cavities in the orebody and then collecting the resulting ore slurry through pipes. The ore will then be taken to underground grinding and thickening circuits and then pumped to the surface as slurry, which will be loaded into special containers for the 70 kilometre journey by road to McClean Lake.

MINING

Karnalyte confident it can build potash mine

Financial Post - To date, no junior potash firm in Saskatchewan has managed to finance and build a greenfield mine. But one of them now is very close to entering the big leagues of the business.

Karnalyte Resources Inc. announced it has engaged BNP Paribas and Natixis to underwrite a secured \$300-million debt facility for its Wynyard project in eastern Saskatchewan.

The financing would cover nearly half the cost required to get the mine into its first phase of production. The site is prepped for construction and the firm is just awaiting final documentation from the government before it can start digging.

Karnalyte, based in Okotoks, Alta., has always had a better shot than its rivals at building a greenfield potash mine because its capital requirements are manageable. While many Saskatchewan potash mines cost \$3-billion or more, Karnalyte needs just \$626-million to get to first production and about \$2-billion to reach full production.

The mine is expected to churn out 625,000 tonnes a year in its first phase and eventually ramp up to 2.125 million tonnes.

Mining to help Sask to 2.9% growth in 2013

Regina Leader-Post - A stronger mining sector will drive Saskatchewan's economy to 2.9 per cent growth this year — good for third place among the provinces — and 3.4 per cent in 2014 for a second-place finish behind Alberta, said the latest provincial outlook from RBC Economics released Wednesday.

"We expect the potash rebound to boost mining output by 4.5 per cent this year and five per cent next (year) after growth of only one per cent in 2012," said the report.

Last year, RBC's forecast for the province's economic growth steadily lowered to 2.4 per cent as demand for potash — and consequently production — softened largely due to weak overseas markets.

However, with multi-year sales agreements signed late last year and early this year with a number of key overseas purchasers demand has started to pick up. In fact, potash production for the first quarter of 2013 is up an impressive 26 per cent over year-ago levels, the report said.

Like Canada Mortgage and Housing Corp., RBC expects housing starts to weaken from 10,000 units last year to 7,900 this year and slowing to 6,900 next year. This weakness, however, will be offset by strength in non-

residential construction, such as ongoing spending on the \$4.1-billion K+S Legacy potash mine. Overall, RBC assumes growth in construction spending this year will be relatively modest at 1.5 per cent.

Western Potash lands Chinese investor

The Northern Miner - Western Potash has lined up \$32 million for its Milestone potash deposit, giving it some breathing room to secure more funds to advance its hefty \$3.3-billion project.

On June 2, the company said CBCHC, a joint-venture between ChinaBlue Chemical — a fertilizer producer and subsidiary of China's oil and gas producer CNOOC — and Benewood Holdings — a subsidiary of investment firm Guoxin International Investment — agreed to buy 45 million shares priced at \$32 million.

The private placement gives the Chinese joint venture a 19.9 per cent stake in Western and a seat on the company's board.

As part of the investment, CBCHC signed a 20-year off-take agreement, where it will purchase the lesser of 30 per cent of annual production or 1 million tonnes of potash a year. That off-take agreement will be automatically renewed for five-year intervals until either party chooses to cancel the extension.

Overall, analysts view the \$32-million cash injection positively but remain cautious about Western's ability to build the capital intensive \$3.3-billion project.

POWER

Saskatchewan seeks hydro deal with Manitoba

Winnipeg Free Press - Saskatchewan is close to a deal with Manitoba to buy hydro-electric power from northern dams to meet its growing residential and industrial demand.

Such an export deal would let Saskatchewan meet its growing power demand and diversify from its own use of coal for energy production. Coal is the primary source of energy in Saskatchewan, accounting for more than 40 per cent of the province's available power capacity and the majority of its base load capacity.

At the same time, Saskatchewan estimates that over the next 10 years it will need enough additional electricity to supply power to approximately 110,000 households, roughly a city the size of Saskatoon. The province also needs additional power for its growing potash and uranium mining industries.

Saskatchewan Premier Brad Wall would not discuss how



Manitoba Hydro

much power his province was considering buying. In 2010, the two provinces agreed to increase power transmission between the jurisdictions by 150 megawatts.

Such a deal has been at the negotiating table for the past four years and if signed could give more support for Manitoba Hydro's proposed construction of the Keeyask and Conawapa generating stations on the Nelson River. The two dams are estimated to cost \$16.5 billion.

The two provinces signed a memorandum of understanding two years ago for Saskatchewan to look at buying surplus energy from the proposed Conawapa and Keeyask dams.

It also included looking at Saskatchewan possibly buying additional power in 2025 and beyond from Gillam Island, a proposed 1,000-megawatt project on the Nelson River.

New gas plant in Saskatchewan

Electric Light & Power magazine - Northland Power's 260 megawatt North Battleford natural gas power plant opened June 5 after completing all required tests.

The facility will provide power to the Saskatchewan power grid under a 20-year power purchase agreement with SaskPower.

The agreement was awarded to Northland following a competitive bid process initiated in 2008.

The project entered construction in June 2010 and was built under an engineer, procure and construct contract by Kansas City based Kiewit Power Partners.

Natural-gas-fired turbines are considered the cleanest form of reliable thermal generation and their use increases the efficiency of the facility, while limiting environmental impacts.

ENVIRONMENT

Saskatchewan not built for spring flooding

NewsTalk CJME - According to one hydrology expert, flood-proofing Saskatchewan will cost tens of millions of dollars.

"It means building bigger culverts and better drainage systems and that gets quite expensive," said John Pomeroy, director for the Centre for Hydrology at the University of Saskatchewan and Canadian Research Chair in Water Resources and Climate Change.

"You can't completely flood-proof a community, the cost of doing so becomes outrageous."

The main driver behind this increase in flooding activity is climate change, said Pomeroy.

Ten years after the worst drought in the province's recent history, Saskatchewan got a record winter snowfall. This variability is something Pomeroy said no one can predict and communities are unprepared for flooding and will continue to be for many years ahead.

"This is really taxing our ability to manage floods because we didn't design Saskatchewan and build our roads for this type of weather," said Pomeroy.

"We have never experienced this before so it wouldn't make sense to build roads and culverts and towns that



www.cjmetalkradio

could withstand these floods based on experience from the past 100 years."

Pomeroy believes that spring-time flooding is something the province needs to get used to.

"I don't think the wet weather is going away. I'm sure we'll also probably see droughts much worse than we've seen, but in between we're going to see wet periods and we'll have to get through those."

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Calendar of Events



pictures4ever.eu

World Mining Congress and Expo

August 11-15, 2013

Montreal, QC

www.wmc-expo2013.org

Fall Professional Practice Exam

Registration Cut off Date: August 16, 2013

www.apegs.sk.ca

33rd Annual Conference of the Canadian Healthcare Engineering Society

September 22-24, 2013

Niagara Falls ON

www.ches.org/en/conferences-events/2013-national-conference.html

Geoscience for Discovery: Society for Economic Geologists

September 24-27, 2013

Whistler, BC

www.seg2013.org

Geoscience for Sustainability

September 29-October 3, 2013

Montreal QC

www.geomontreal2013.ca

4th Canadian Young Geotechnical Engineers and Geoscientists Conference

October 3-6, 2013

Mont Tremblant, QC

www.cygegc2013.ca

2013 Canadian Dam Association Annual Conference and Exhibition

October 5-10, 2013

Montréal, QC

www.cda.ca

Canadian Design-Build Institute Conference

October 16-18, 2013

Saskatoon, SK

cdbi.org/events

Saskatchewan Innovation Week 2013

October 21-26, 2013

www.saskinnovationweek.ca

World Petroleum Congress Youth Forum

October 22-25, 2013

Calgary, AB

www.wpccanada.com/youthforum/

Developing the Skills of Highly Effective Leaders The Banff Management Course

October 23-26, 2013

Banff, AB

www.banffcourse.com

Reverse Engineering Considerations and Challenges

November 28, 2013

Toronto, ON

www.kinectrics.com

Spring Professional Practice Exam Registration

Cut off date: March 14, 2014

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