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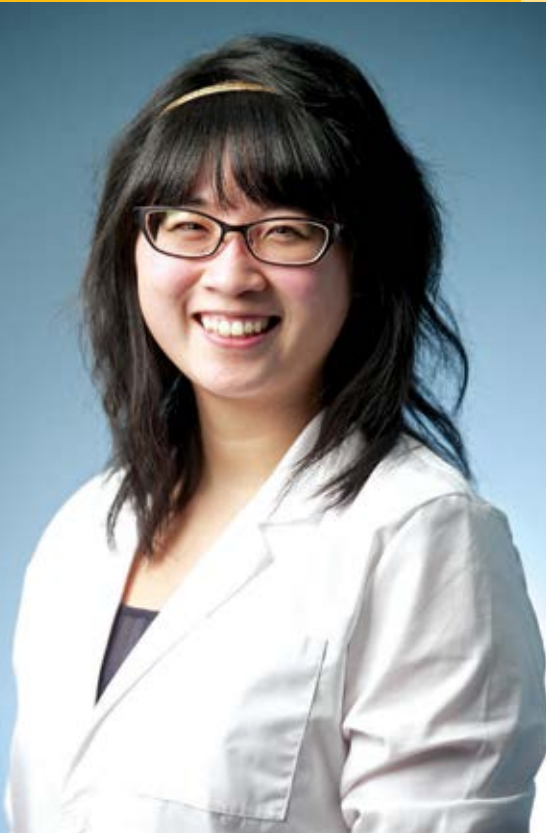
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For full details, visit: [http://www.edu.gov.mb.ca/ald/tax\\_credit/index.html](http://www.edu.gov.mb.ca/ald/tax_credit/index.html)

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Allyson Desgroseilliers,  
P. Eng.

## Challenges and Opportunities Ahead

It is an honour to serve as ACEC-Manitoba's President for the 2016–2017 term. My sincerest gratitude is extended to Past-President Alana Gauthier, the ACEC Board, Shirley Tillett, Kerri Hiebert, and the committed volunteers for their time and hard work.

The change in our provincial leadership will present some challenges and unique opportunities for the upcoming year.

Fortunately, the Association will be able to continue the momentum that was built by Past-President Cameron Dyck in 2014, and strategically continued by Alana Gauthier in 2015. Going forward, we need to continue to build relationships with the current political leaders, while also combining our efforts with other stakeholder organizations such as the Certified Technicians and Technologists of Manitoba (CTTAM), Engineers Geoscientists Manitoba (EGM), Manitoba Association of Architects (MAA) and the Association of Manitoba Municipalities (AMM) because we share common objectives.

As a result, the next year will be focused on three key areas:

1. Advancing the work of the government affairs committee,
2. Supporting the activities of our committees that bring immediate and direct benefits to our members, and
3. Establishing a longer term strategic plan that is aligned with ACEC-Canada objectives as well as our own.

The Government Affairs committee and sub-committees have been focused on getting the message out about Qualifications Based Selection

Not only are we striving to implement change, but we are also improving our communications with Government and promoting the consulting engineering profession.

(QBS) as a procurement strategy, the consequences of Manitoba joining the New West Partnership Trade Agreement, and the disadvantages of our current *Limitation of Actions Act*.

To this end, strategic plans have been developed to approach each of these issues. Many discussions have already been held with Provincial and Municipal leaders, as well as the City of Winnipeg and other stakeholders, to discuss each of these three main issues.

Not only are we striving to implement change, but we are also improving our communications with Government and promoting the consulting engineering profession. Ultimately, we will increase public awareness of the pivotal role that consulting engineering companies play in the application of technology, safety and protection of society. These efforts require consistency in our messaging as well as continuity from one year to the next.

The second key area for the Association will be to continue those activities where the benefit to our members is immediate.

These activities range from industry mixers, social events, mentoring opportunities, training opportunities, networking and of course recognition, through the annual awards. There will also be a greater focus on communicating these events before, during and after they occur.

The third key area for the Association in 2016–2017, will be in the development of a longer term strategic plan for ACEC-MB. The goal is to develop a plan that is aligned with ACEC-Canada while making it relevant to us locally. I expect our local plan to include the goal of improved diversity; strategies for working with the City of Winnipeg on their upcoming changes to their procurement processes; and to provide the types of events, support, and training that is useful to our membership.

The next year is shaping up to be a busy one. New government infrastructure projects are expected to offset the declines experienced in other sectors. It is a promising time to be in the consulting engineering business in Manitoba. 🍷



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Rick Tiller,  
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## Leveraging Your Investment With Qualifications-Based Selection

**F**or most clients, selecting an engineering firm may be the most important decision in ensuring the success of its project. Upfront procurement decisions have a significant impact on not only the cost and quality of the design and construction phase, but on operations and maintenance of engineered assets over their entire design life. In order to ensure the best possible outcome and the best possible value to the owner – whether public or private sector, clients should be encouraged to use best practices for procurement that consider important selection criteria other than price.

Success is achieved by selecting the right team for the right project at the right price. That's why the Association of Consulting Engineering Companies-Canada supports the *Best Practice: Selecting a Professional Consultant* developed by the National Guide to Sustainable Municipal Infrastructure (InfraGuide). A collaboration of the Federation of Canadian Municipalities and the National Research Council, InfraGuide recommends a competitive Qualifications-Based Selection (QBS) model. QBS encourages the selection of the most qualified team who will work with the owner to jointly develop the required scope of services and the appropriate schedule and fees. QBS is similar to hiring people – identify the candidate who will provide the most value to the organization and help the organization achieve its objectives, and then negotiate terms of employment.

Prudent owners and clients will recognize engineering as an investment to be leveraged, rather than an expense to be minimized.

### Better value and more cost certainty

QBS encourages innovation and provides better value on investment. It provides accountability by ensuring that fees will directly correspond to the level of service and the value of deliverables to be provided. QBS also results in more realistic and predictable budgets and schedules for capital expenditures. It is important to note that QBS is a competitive process – the cost of engineering services is a factor in the procurement, but it is finalized after the most suitable firm for the project has been selected.

### Significant life-cycle savings

QBS maximizes the value of the engineer's contribution to a project while reducing the project's life-cycle costs. Design engineering typically accounts for only about 2% of the life-cycle cost of infrastructure, but dramatically impacts the cost and quality of the remaining 98%. A recent American Public Works Association study shows that using QBS for engineering services reduces construction cost overruns from an average of 10% to less than 3% – equivalent to a savings of up to \$700K on a \$10M capital project (These

savings are often greater than the original design fees!). QBS emphasizes quality, fosters innovation and generates real savings in construction, operations and maintenance. This saves taxpayer dollars while optimizing public safety and welfare.

### What's wrong with the lowest price?

When procurement is based on the lowest possible fee, there are potential long-term consequences for cost, quality and public safety. Selecting the lowest fee creates pressure to expend the least amount of resources necessary to meet the bare minimum requirements of the project – losing an opportunity to optimize the design, reduce life-cycle costs and enhance safety. It also discourages innovation and effectively penalizes proponents that anticipate potential complexities or who wish to propose value-added solutions that save money in the long-term. The results of this will be felt in the years to come.

Prudent owners and clients will recognize engineering as an investment to be leveraged, rather than an expense to be minimized. QBS ensures that it will be a smart investment. 🎯

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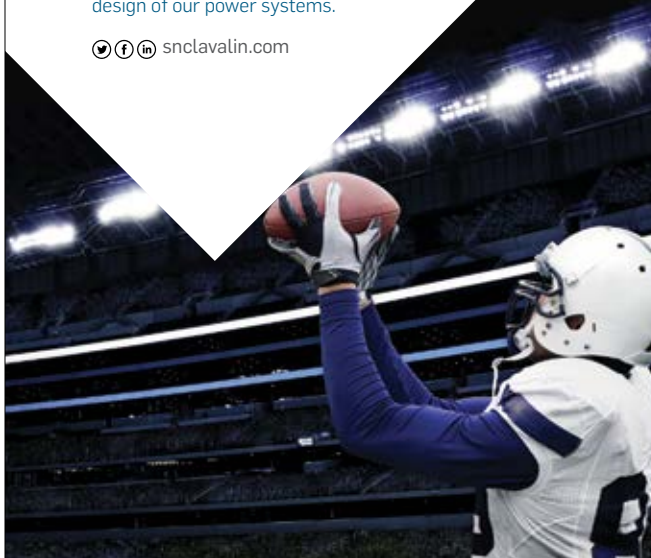
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# The Four Horsemen of the Anth

Marcia Friesen, P.Eng.

Do you know when the Anthropocene was? Actually, it is the era in which we are currently living. The Anthropocene is the era in which human activities are having significant and unprecedented impacts on the planet, with consequences both foreseen and unforeseen. Humanity, using our phenomenally powerful brains, is transforming Earth in unprecedented ways. The massive impacts of the world economy are creating major disruptions of Earth's physical and biological systems that are large, serious, and highly disruptive.

One of the main drivers of change to Earth's systems is humanity's immense use of fossil fuels as primary energy sources. The rising concentration of CO<sub>2</sub> in the atmosphere is the main, though not the only source of human-induced climate change.

Climate change is not the only concern though. If there are Four Horsemen of the Anthropocene, they could be called climate change, population growth, extreme poverty and wealth disparity, and environmental degradation.

In 2015, Jeffrey Sachs published *The Age of Sustainable Development*. In my opinion, this book has a lot to offer to the engineering profession and engineering education. It highlights that we are living in an unprecedented context with respect to the number of people on the planet, and the rate and range with which human activity is changing the planet. Because one's present situation is often also one's benchmark or status quo, the gravity of this reality is easily forgotten or unobserved. Yet, Sachs is optimistic that solutions are possible, if complex. The solutions have legal, political, social, and technological dimensions. As such, there is a role for engineering, and there is a role for engineering education.

Sachs' premise is a holistic view of sustainable development which envisions four basic objectives: economic development, social inclusion and cohesion, environmental sustainability, all enacted under good governance (both

corporate and national or international). As such, sustainable development deals with four complex, interacting systems: the global economy, social interactions, Earth's natural systems, and governance.

Economic development, one aspect of sustainable development, is grounded in several foundational premises. First, technological advances *are* indeed the main driver of long-term economic growth, and are therefore desirable. Second, technological advances often have negative side effects, even if their direct effects are enormously positive. An example is the burning of coal for power, with the side effect of air pollution. Another example is the use of fertilizers to increase crop yields, with the side effect of soil and water pollution. Third, technological advance is, to some extent, under human guidance. It can be directed in deliberate, goal-based ways.

The Anthropocene is the current age where the negative side effects of our past and current economic development continue to re-shape Earth's physical systems – climate, chemistry, and biology – in dramatic ways. The impacts are seen in climate change, in environmental degradation or depletion of air, freshwater, oceans, land, and loss of biodiversity.

Yet, we need to keep living on this planet, and indeed we need to keep living on this planet with more people than ever before. In 1960, the global population was two billion. By 1974, it was four billion.

Only 17 years ago, in 1999, it reached six billion. Five years ago, in 2011, it reached seven billion. So in my own lifetime, global population has almost doubled. If I reach an average life expectancy, Earth's population will reach nine billion before I die (2050-ish). Every single person deserves a safe home, good food to eat, clean water to drink, education, healthcare, and a dignified way to earn a living in a well-governed community.

It is true that the engineering profession has always been concerned with sustainable development, developing socially conscious and forward-looking technological solutions for humanity. I am not dismissing this noble history. However, the context has changed. We need to keep living on a planet that is under stress. We need to plan to live here with more people than currently live here, and we need to not only mitigate but also adapt to the negative impacts of our past and current economic development and technological advances. The role of engineers is as critical as it has ever been.

Through the Centre for Engineering Professional Practice & Engineering Education at the University of Manitoba, we are in the initial stages of planning for students' exposure and immersion in sustainable development perspectives in a deliberate and integrated way throughout their curriculum. Sustainable development has countless applications in the engineering curriculum, including but not limited to the following:

# thropocene

- *Climate change mitigation and adaptation*, with engineering applications in developing sustainable energy resources; power reliability and stability in extreme weather events and changing environmental conditions; water resources management; and, design of new and retro-fitted climate-resilient and climate-adaptive infrastructure, such as cities with flood protection to unprecedented surge levels.
- *Agriculture and food security*, with engineering applications in precision farming (information-rich farming); improved water management; and, improved harvesting, storage, and transport of crops to reduce losses from farm to plate.
- *Transportation and resilient cities*: Cities cover approximately 3% of the world's land mass, yet by 2050, 66% of global population is expected to be urban-dwelling (in North America, 80% urban-dwelling). The high population density brings challenges associated with air pollution, water pollution, traffic congestion, and social stability in the face of disease spread and other externalities. Engineering applications include ensuring a productive infrastructure; roads and public transportation; energy and power; communication and connectivity; water resources and waste management. In an era of human-induced climate change, resilience also means decreasing the ecological footprint of the city and increasing adaptation to changing environmental conditions and extreme weather events.
- *Smart systems*: meters, monitors, machine-to-machine communications and other information technology to enhance efficiency and

optimize the integration of large interdependent systems.

- *New paradigms for thinking about data for design across all disciplines* which emphasize risk assessment and data integrity.

Our professors and students are already doing this, because the planet doesn't stop and wait! There are professors who explicitly discuss and integrate sustainable development in their courses. Several research chairs are directly related to energy alternatives and the changing North, and other research programs also address the application areas outlined above. There are affinity groups for extra-curricular student involvement, like Engineers Without Borders and Students for Sustainability. The interest and urgency already exists within the Faculty of Engineering. We want to build on this to ensure *all* engineering graduates have a comprehensive understanding of sustainable development.

Through design courses, capstone projects, Technology & Society topics, and Engineering Economics, we can be deliberate and build incremental learning opportunities that tie the engineering curriculum to our world's challenges. For many years, the Faculty of Engineering has embraced a view of students as future professionals from their first day in the program. Within that view, the curriculum is shaping their understanding of who they are as a future engineer and how our profession fits into society. Developing learning opportunities around a holistic view of sustainable development is a chance to shape this identity and to shine a light on the differences that engineering can make to humanity in a spirit of optimistic urgency.

If you are interested in knowing more or contributing to this journey, I invite you to contact me at [marcia.friesen@umanitoba.ca](mailto:marcia.friesen@umanitoba.ca).

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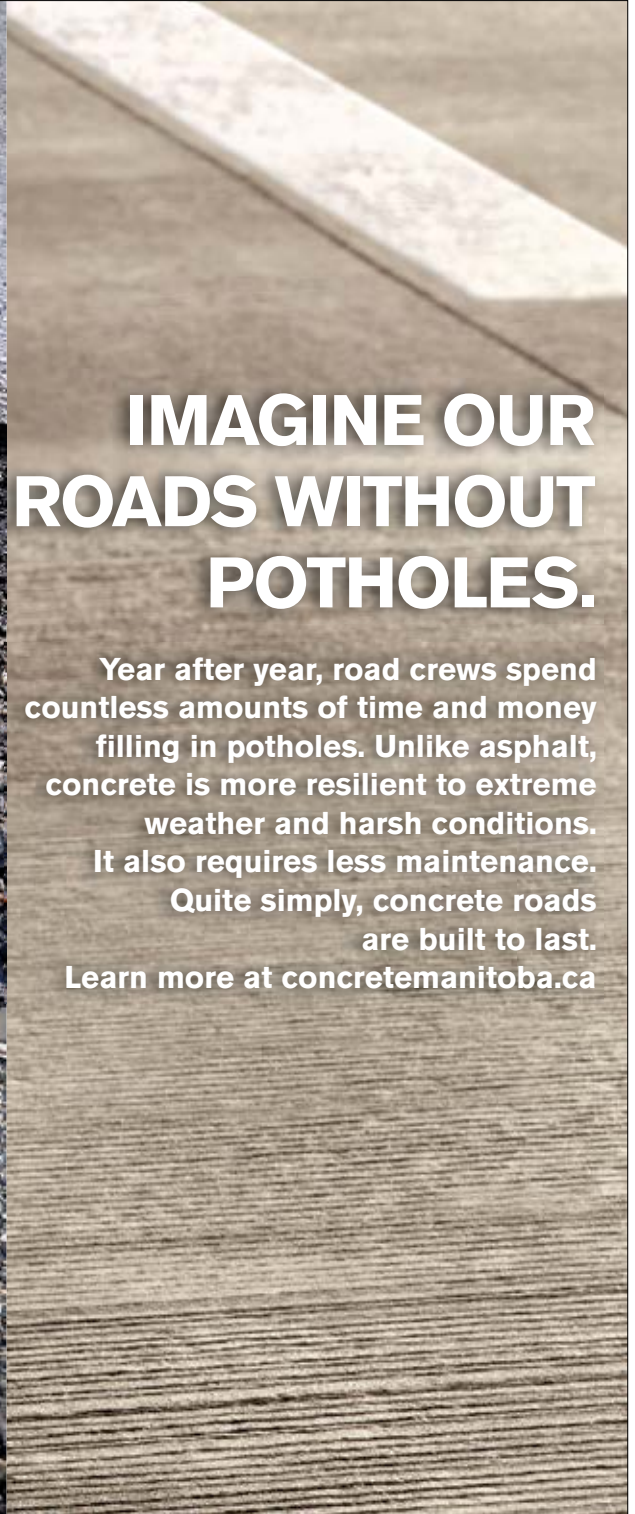
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Project Name: **Pointe du Bois Spillway Replacement Project**

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Client: **Manitoba Hydro**

This project also won an AWARD OF EXCELLENCE



The Pointe du Bois Generating Station is the oldest operating hydroelectric plant in Manitoba. The station was originally constructed between 1909 and 1926, with the first unit put into service in 1911, and was later acquired by Manitoba Hydro in 2002. The generating station is situated on the Winnipeg River and within the Whiteshell Provincial Park. The site is located approximately 170 kilometres by road northeast of Winnipeg and 43 kilometres east of Lac du Bonnet.

Despite extensive upgrades and ongoing maintenance over the years, the original concrete spillway and dam facilities required replacement to ensure reliability of power production, to provide a safe and efficient work environment for staff, and to meet current dam safety standards. The Pointe du Bois Spillway Replacement Project

included the design and construction of:

- A state-of-the-art remotely operated seven-bay spillway complete with an ancillary support building and a backup diesel generator;
- Approach and discharge channels through the mainland on the east side of the river, which required blasting and excavation of 682,000 m<sup>3</sup> of solid Canadian Shield bedrock;
- And two new clay core zoned earthfill dams (Main Dam and South Dam) which included the placement of 237,000 m<sup>3</sup> of earthfill materials and a foundation grout curtain cut-off. Close-out works included decommissioning existing structures and revegetation of temporary staging areas using native plant species endemic to the region.







The Project brought the station back in compliance with modern dam safety standards while preserving well-established lake sturgeon habitat and restoring the natural landscape in this environmentally sensitive provincial park setting.

KGS Group and Peter Kiewit Infrastructure Group (PKI) were the prime consultant and contractor to Manitoba Hydro for the Project respectively. KGS Group was responsible for overall project design and PKI was responsible for all construction activities. KGS Group also provided fulltime technical support and quality assurance assistance to Manitoba Hydro through construction, commissioning and close-out activities. To facilitate final design and implementation of construction, Manitoba Hydro adopted an “early contractor involvement” (ECI) model. The ECI contract delivery model is where an owner, engineer and contractor work in a process of open communication and collaboration on a project to identify and manage risks, develop the scope of work, final design, cost estimates and schedules.



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The key benefits of this contractual model are its focus on the Best for Project Value, while mutually sharing risk and developing a balanced contract. Together, Manitoba Hydro, KGS Group and PKI (the Team) successfully saw the Project through its inception, design, construction and final commissioning.

The Project, given its magnitude and diverse set of problems and challenges, required an equally diverse team of engineers, scientists, construction experts and technical support staff from all parties of the Team. Virtually every engineering discipline was utilized including structural, geotechnical and geological, hydrotechnical, municipal, environmental, mechanical and electrical. The environmental and ecological sensitivities also required the full integration of scientists, ecologists and biologists. The Team employed a leading-edge fully integrated digital 3D design model to harmonize the contributions from this diverse group of professionals. The model had many advantages and was comprehensive, including all physical aspects and finite details of the Project.

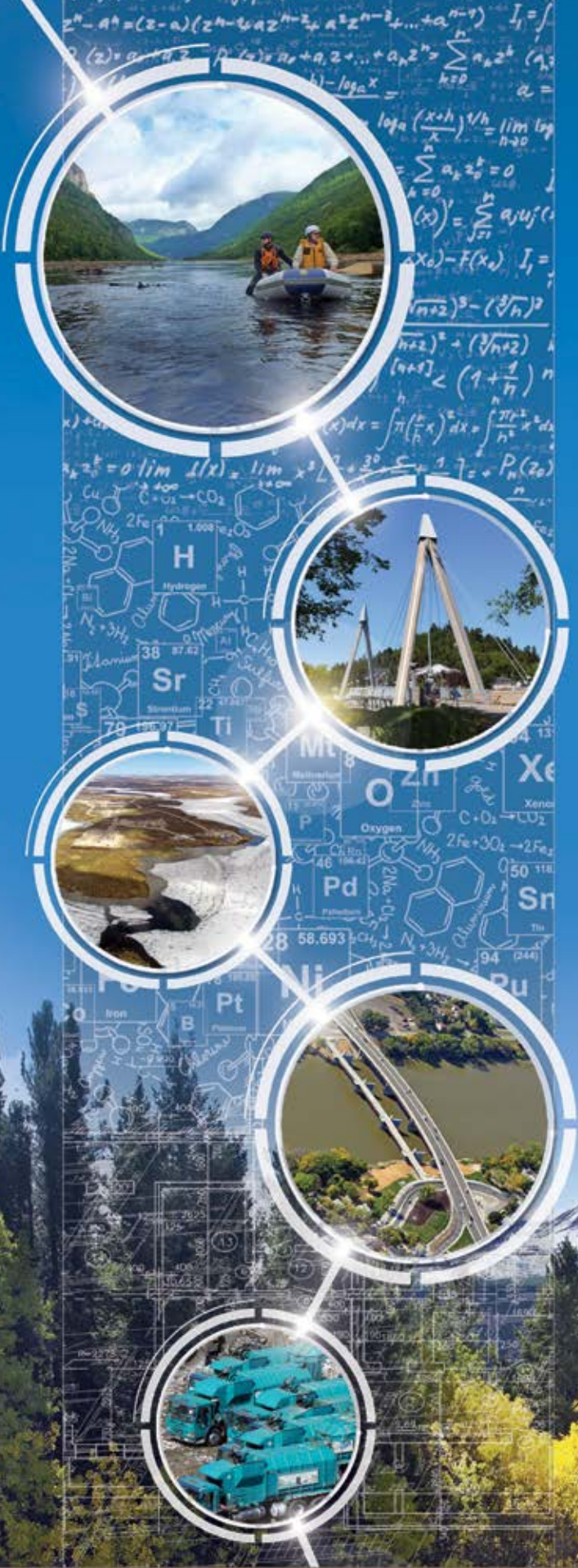
The Team also applied other innovative technologies throughout the design phase including a 50:1 scale physical hydraulic prototype of the spillway and channels to optimize hydraulic efficiency, channel geometry, and cost. State-of-the-art digital 3D hydraulic modeling, coupled with Habitat Suitability Index modeling, was integrated with the final design process to ensure that post-Project flows would continue to promote sustainable lake sturgeon habitat within the tailrace. The Project also posed complex challenges such as construction logistics, river management and blasting shockwave attenuation requirements that compelled the Team to think “outside of the box,” and use unconventional techniques and materials to finish the Project within the owner’s budget and schedule expectations.

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# AWARD OF EXCELLENCE

## Energy Resource Development Category



Project Name: **Western Alberta Transmission Line HVDC Project**

Firm: **Teshmont Consultants LP**

Client: **AltaLink**

The Western Alberta Transmission Line, placed into service on December 10, 2015, is Alberta's first in-service HVDC line linking Edmonton and Calgary. The 500 kV line improves overall system reliability, reduces system congestion and will save an estimated 350,000 tonnes of carbon emissions from entering the atmosphere each year. In 2010, AltaLink engaged Teshmont Consultant of Winnipeg to act as their Owner's Engineer for the project. Over the course of five years, Teshmont performed engineering design studies, prepared specifications, evaluated tenders, assisted with contract negotiations, performed design reviews, witnessed factory tests, delivered specialized training, assisted during system start up and commissioning as well as provided project management support.



# AWARD OF EXCELLENCE

## Building Engineering Category

Project Name: **RBC Convention Centre Winnipeg Expansion**

Firm: **Crosier Kilgour & Partners Ltd.**

Client: **RBC Convention Centre Winnipeg**



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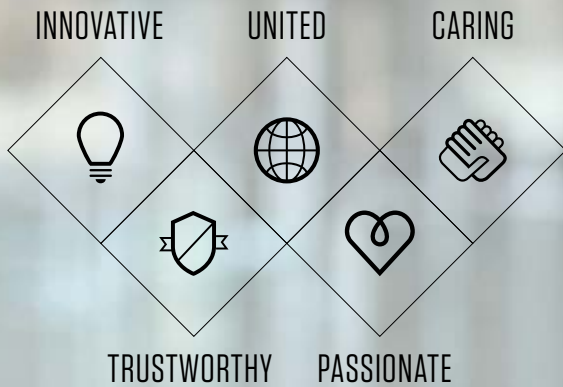
RBC Convention Centre

WINNIPEG

**E**xpansion of the RBC Convention Centre Winnipeg presented many unusual complexities not typically found in more mainstream building renovations. Engineering intricacies included creating a large, open exhibition hall over York Avenue capable of supporting semi-trailer trucks, providing acoustic separation between the exhibition hall and ballroom beneath, and providing an interior spiral truck ramp for access to the exhibition hall. The result is not only a flexible, functional space for the RBC Convention Centre Winnipeg, but also a showcase space that has become a new Winnipeg landmark.



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# AWARD OF EXCELLENCE

## Municipal and Water Technology Category



Project Name: **Assiniboine River & Lake Manitoba Basins Flood Mitigation Study**

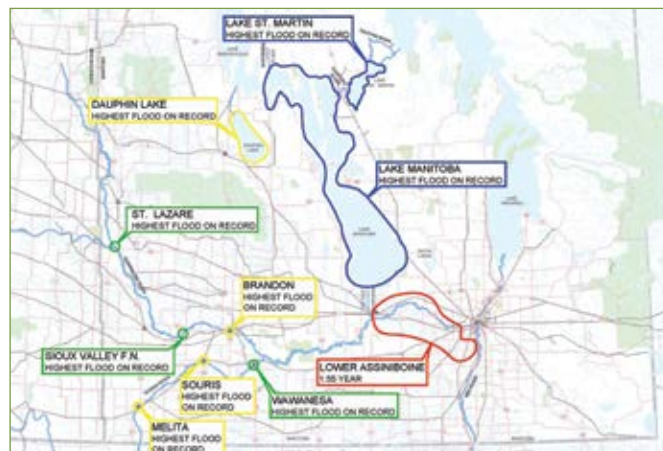
Firm: **KGS Group**

Client: **Manitoba Infrastructure and Transportation**



The flood of 2011 highlighted several potential “weak links” in Manitoba’s flood control system. To address the propensity for flooding in the Assiniboine River and Lake Manitoba basins, KGS Group was retained by Manitoba Infrastructure and Transportation to conduct a flood mitigation study, which identified major vulnerabilities and assessed over 70 mitigation options.

Based on the results of sophisticated models and feedback from Public Open House events, over \$1 billion of flood mitigation upgrades required to increase the flood protection level were identified. The results will serve as the foundation for major flood mitigation programs for the next several decades.



# AWARD OF EXCELLENCE

## Municipal and Water Technology Category

Project Name: **Bowness Sanitary Offload Trunk**

Firm: **AECOM Canada Ltd.**

Client: **The City of Calgary**



The Bowness Sanitary Offload Trunk was constructed to provide additional sanitary sewer capacity for Northwest Calgary to 2076.

AECOM saw that a widespread deployment of trenchless construction technology was well matched to the major technical challenges for the project and would result in successful delivery at a lower cost, in less time and with considerably less impact on the public and the environment. This proposal was highly innovative and is the largest Microtunneling project completed in Calgary to date.

The project was substantially completed in December 2015, one year ahead of the original schedule, within the project budget.





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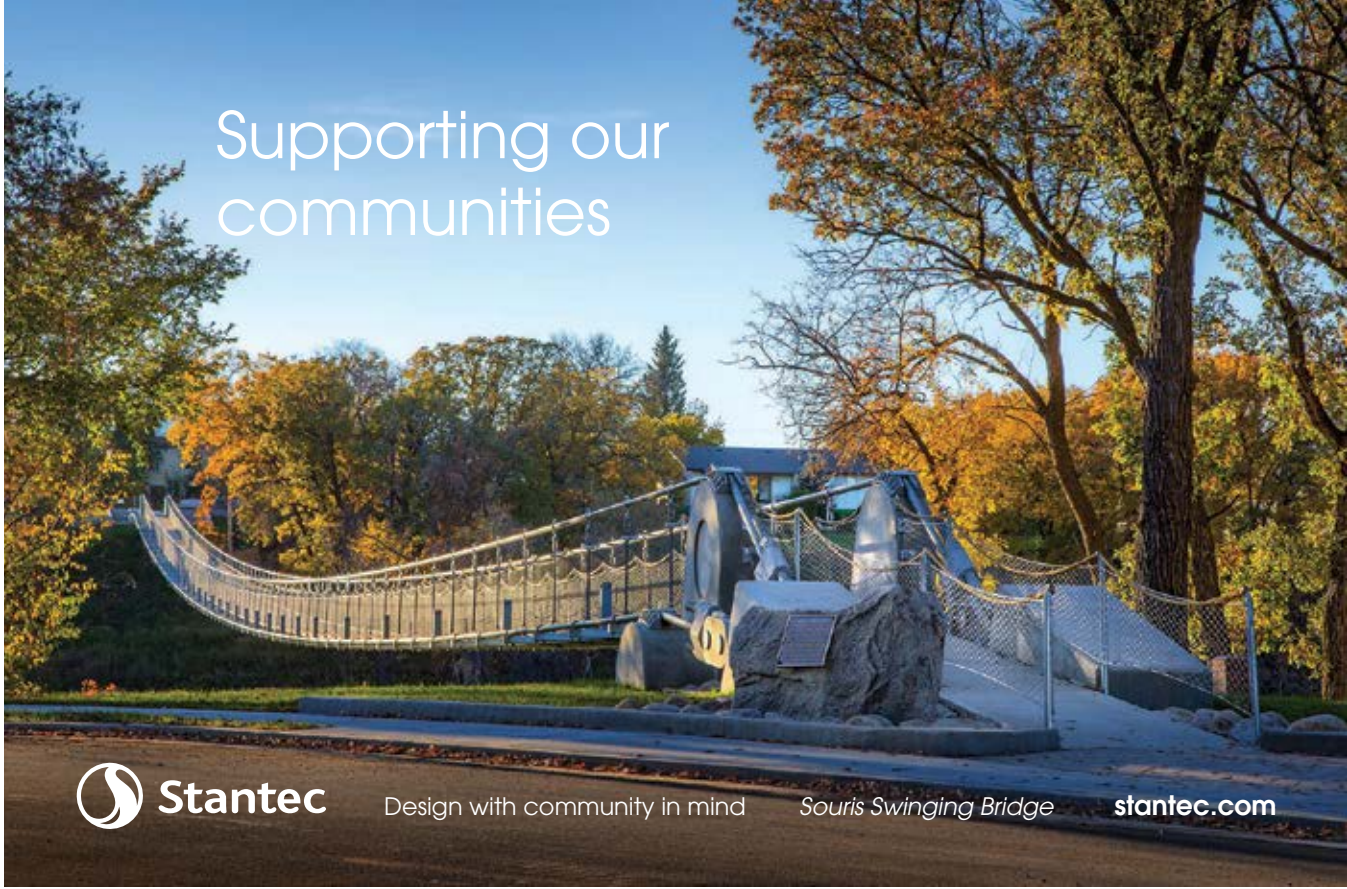
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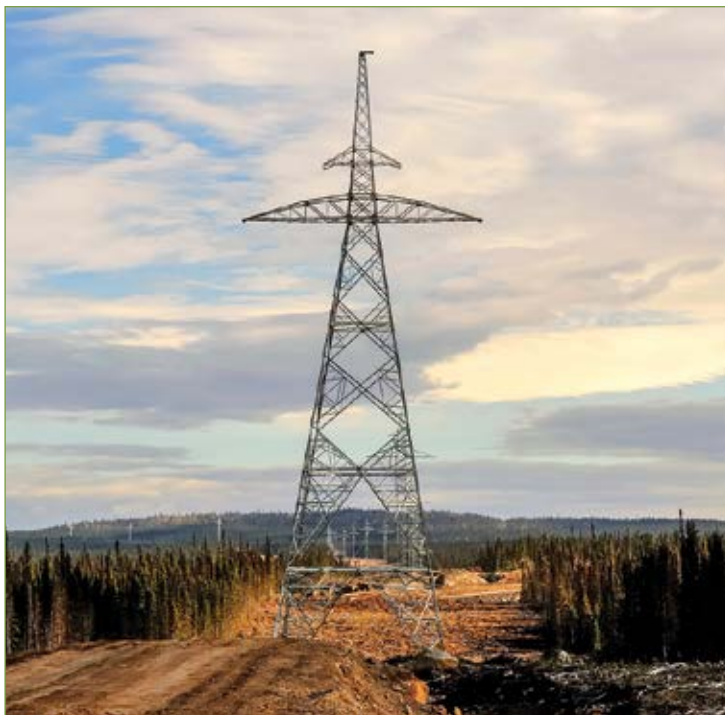
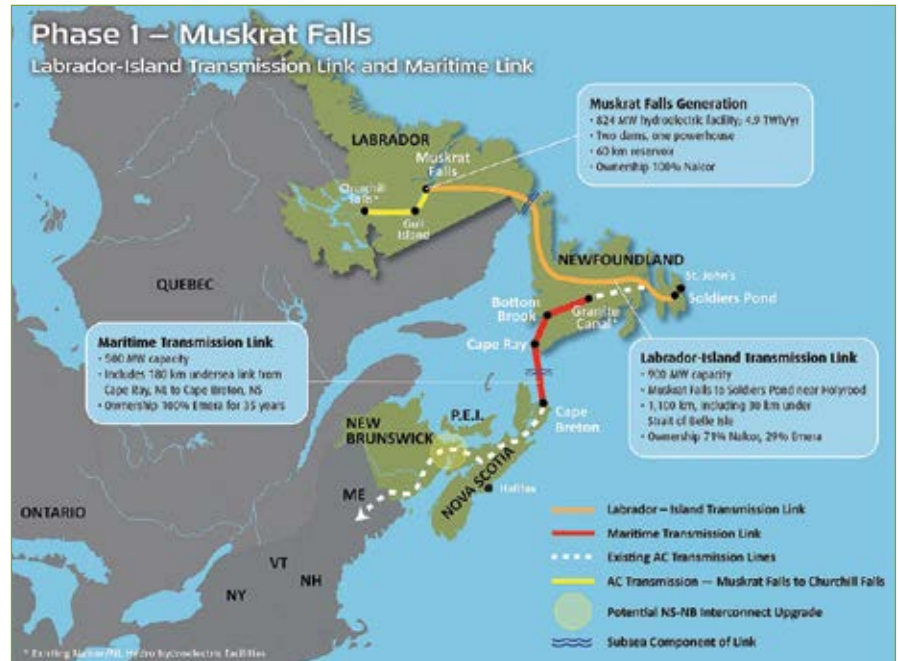
# AWARD OF EXCELLENCE

## Small Projects Category

Project Name: **Probabilistic Based Reliability Analysis for Transmissions Systems Project**  
 Firm: **Teshmont Consultants LP**  
 Client: **Nalcor Energy**



Teshmont proposed an innovative approach to analyze the impacts of over \$3.6 billion of transmission upgrades on the reliability of the Newfoundland and Labrador electrical system for Nalcor Energy. The proposed upgrades to the system include the development of two high voltage direct current (HVDC) transmission systems, one from Labrador to the island of Newfoundland, and a second HVDC system from Newfoundland to Nova Scotia. By applying probabilistic analysis in conjunction with deterministic power system studies, Teshmont was able to definitively quantify that proposed transmission system upgrades in the province would decrease unserved energy by a factor of over 1,000 times.





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# AWARD OF MERIT

## Energy Resource Development Category

Project Name: **Whitehorse Diesel – LNG Conversion Project**

Firm: **KGS Group**

Client: **Yukon Energy Corporation**



**Y**ukon Energy Corporation constructed a new liquefied natural gas (LNG) fueled backup power generating station and associated infrastructure in Whitehorse, Yukon. Commissioned in 2015, the site includes two modular reciprocating generators with a total capacity of 8.8 MW to replace Yukon Energy’s aging diesel generators, providing flexible and reliable power to supplement Yukon’s renewable hydroelectric and wind power. LNG had not previously been stored or used as a fuel for electrical power generation in Yukon. Selecting LNG over diesel, YEC has improved the sustainability of northern communities by offering savings for ratepayers and by reducing greenhouse gas and particulate emissions.



# AWARD OF MERIT

## Building Engineering Category



Project Name: **Assiniboine Park Zoo Journey to Churchill Project**

Firm: **SMS Engineering Ltd.**

Client: **Assiniboine Park Zoo**

The Journey to Churchill, one of Destination Canada's Canadian Signature Experiences, is part of a phased redevelopment project helping to revitalize Winnipeg's Assiniboine Park Zoo.

SMS Engineering provided both mechanical and electrical engineering design to the Journey to Churchill that includes the Polar Bear Playground, Leatherdale International Polar Bear Conservation Centre and Tundra Grill restaurant.

These display, theatre, retail and hospitality spaces showcase Churchill, one of Manitoba's true treasures. Through creative, interactive displays and informative programming, the space adds real value to the Park, which continues to gain a reputation as a world-class destination.



# AWARD OF MERIT

## Infrastructure and Transportation Category



Project Name: **Bridge Rehabilitation on PTH 23 Spanning the Red River Project**

Firm: **Stantec Consulting Ltd.**

Client: **Manitoba Infrastructure and Transportation**

**M**anitoba Infrastructure and Transportation retained Stantec to complete a detailed bridge rehabilitation design for an existing structure spanning the Red River on PTH 23 located at Morris, Manitoba.

This bridge is a critical element in the transportation network providing the sole access to the Town of Morris during a major flood event. The nine span structure, constructed in 1968, was approaching the end of its original design service life with concrete deterioration, and substructure and riverbank movements primarily driving the project. To limit disruption to the public and reduce flood related scheduling risks the bridge incorporated precast concrete deck panels.



# AWARD OF MERIT

## Small Projects Category

Project Name: **Magellan Aerospace – Advance Satellite Integration Facility**

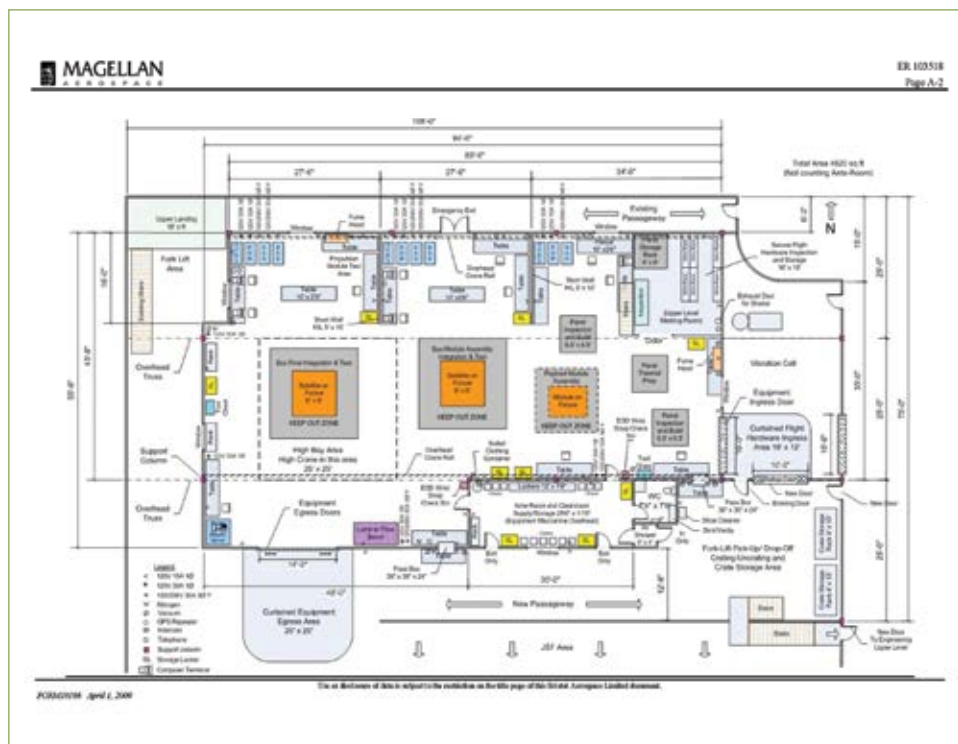
Firm: **KGS Group**

Client: **Magellan Aerospace Corporation**



**M**agellan Aerospace Corp. was awarded a CAD \$110 million contract for the RADARSAT Constellation Mission (RCM) satellite bus manufacture.

The RCM consists of three low earth orbit spacecraft designed for maritime surveillance (ship detection, ice monitoring and oil spill detection), disaster management, and ecosystem monitoring. Design and construction of the Advance Satellite Integration Facility, where the satellites are constructed, required an intense multi-disciplined engineering effort between KGS and Magellan to meet the stringent requirements and aggressive schedule established for manufacturing these satellites. The new facility was successfully constructed in 2015 and placed into operation.



# RISING STAR AWARD

Lin Watt, EIT, PMP

The Rising Star Award is intended to recognize exceptional achievements in the early years of a person's career. This award was established in 2008 in recognition of the 30th anniversary of the Consulting Engineers of Manitoba. The award is intended to celebrate a young individual who has demonstrated excellence in business practices, outstanding achievements in their applicable fields, leadership in the community and the active participation in the association. The award was first presented to Daniel Zaborniak in 2008, followed by Jason Cousin in 2009, Beth Phillips in 2010, Owen Van Wallegghem in 2011, Jonathan Epp in 2012, Kimberly Yathon in 2013, Kristen Poff in 2014 and Jomar Manzano in 2015. ACEC-MB congratulates Lin Watt, EIT, PMP, as the 2016 Rising Star Award recipient.

## Lin Watt, EIT, PMP

Lin is a project manager and chemical engineer-in training with five years of consulting experience. She has a B.A.Sc., Chemical Engineering, from the University of British Columbia,

2011, and a Certificate with Honours in Project Management from Red River College in 2015. She joined Dillon in 2011 and transferred to the Winnipeg office in 2012.

Lin specializes in working with rural municipalities to develop long-term plans for their drinking water and wastewater infrastructure. Lin is a key team member within Dillon's client relations team serving Manitoba rural municipalities and The Manitoba Water Services Board. She has been successful in securing several small contracts, and has acted as Project Manager on 10 projects ranging in fees from under \$10,000 to over \$250,000. While continuing to work full-time, Lin attended night classes and obtained both a Certificate in Project Management and her PMP designation last year.

Lin has been an active volunteer with ACEC-MB for four years. Her committee work is extensive: she joined ACEC's Young Professionals Committee (YPC) in 2012, became Co-Chair of the committee in 2013, Chair in 2014, and is now Manitoba's representative



on the national ACEC Canada Young Professionals Network. As Chair of the YPC she also served as a Director on ACEC-MB's Board of Directors from 2014–2015. She is a current member of both the Water and Environment Committee, and the Communications Ad Hoc Committee.

Lin's volunteerism includes technical associations other than ACEC-MB. She was a key member of the 2015 Western Canada Water Conference Organizing Committee; she is a member of the Western Canada Section American Water Works Association YP Committee and the Western Canada Water Magazine Editorial Committee; and she is a member of the Engineers Geoscientists Manitoba Centennial Committee. Lin also participates in public education, to help others understand the role and importance of the profession. She has guest lectured in CIVL 3700 at the University of Manitoba, and promoted engineering as a career choice in presentations to high school students in Vancouver and her hometown of Halifax, NS.

Lin is a high performer who has many achievements early in her career. She is a dedicated employee and volunteer, a strong advocate for the interests of ACEC and the engineering profession, and a rising star within our community and company.

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# ENGINEERING ACTION AWARD

Cameron Dyck, P. Eng., PE

Established in 2005, the Engineering Action Award recognizes outstanding service and dedication to the association, the Canadian consulting engineering profession and the community through volunteer activities to an engineer who is actively practicing in the industry. Previous recipients include Garry Bolton in 2005, John Woods in 2006, Roger Rempel in 2008, Ken Anderson in 2009, Ralph Kurth in 2010, William (Bill) H. Brant in 2011, Tom Wingrove in 2012, Ron Typliski in 2013, Alana Gauthier in 2014, and Grantley King in 2015. ACEC-MB congratulates Cameron Dyck, P. Eng., PE as the 2016 Engineering Action Award recipient.

## Cameron Dyck, P. Eng., PE

Cameron graduated from Red River College with a Civil Engineering Technology Diploma in 1987 and a Civil Engineering degree from the University of Manitoba in 1993. He is a registered professional engineer (P.Eng.) in Manitoba and Ontario as well as a PE in Arizona. He began working at Stantec in 1998 as a Project Engineer and in 2005 moved to Las Vegas with his family to work as Senior Project Manager in the Urban Land Group. In August 2006, he returned to Winnipeg to become Managing Leader of the Water Group for Stantec Winnipeg. Cameron was appointed Senior Associate in 2006 and became a Principal of the firm in 2014.

Cameron's expertise in analysis, design and project management has been cultivated through numerous water distribution, storm water management, sanitary sewer engineering planning studies, and underground infrastructure evaluations. Cameron also has significant experience in construction management, inspections and contract administration. He has worked on numerous, important, environmental infrastructure projects throughout Manitoba, and has developed a thorough understanding of the industry and his clients' needs. Some major recent projects Cameron has been involved in include: Bipole III Complex Keewatinohk and Riel Converter Stations for

Manitoba Hydro; Reliability Improvement Initiative – Riel Sectionalization for Manitoba Hydro in the RM of Springfield; RM of West St. Paul Wastewater Sewer Study, and has been Project Manager for a wide variety of municipal infrastructure for the City of Winnipeg including the recent St. Boniface Industrial Park Subdivision wastewater lift station.

Cameron joined the Board of ACEC-MB in 2011. He was elected as President of the Board in 2014 and currently serves as Past President. As President, he initiated the Government Affairs Committee and has been a member of the committee since its inception. This committee contributed greatly to increase ACEC-MB's formal communication with all levels of Government. He also lobbied for creation of the Advocacy Section on the ACEC-MB website to keep ACEC-MB Members and the public aware of the issues that ACEC-MB is involved in advocating for. As well, Cameron has been a member of the Image Committee as Board Liaison and has also served on the Water and Environment and First Nations Committees. In 2014, he initiated the updating of the ACEC-MB Members Charter.



Other volunteer activities outside of the engineering community include eight years of coaching in the Winnipeg Minor Basketball Association where he has coached both of his daughters. In addition, he has volunteered for the Junior Achievement, the Winnipeg Synchronized Swimming Club and served for 3 years on the 1999 Pam Am Games Forks Entertainment Committee. Cameron is married to Suzanne and has two daughters (ages 13 and 16) that keep him young.



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# LIFETIME ACHIEVEMENT AWARD

Jerry Cousin, P. Eng

As part of the Awards of Excellence Program, the Consulting Engineers of Manitoba acknowledge the individual achievements of Manitoba's consulting engineers through the Lifetime Achievement Award. This award is presented to a Manitoba engineer in recognition of his or her leadership, achievements and contributions to consulting engineering.

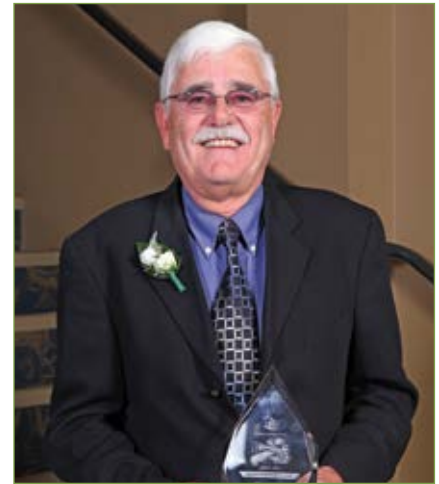
Previous recipients include Les Wardrop in 2002, Bill McKay in 2003, William Mitchell in 2004, Russell Hood in 2005, Al Dyregrov in 2006, Alfred Poetker in 2007, Norman Ulyatt in 2008, Peter Washchshyn in 2009, George Rempel in 2011, Garry Bolton in 2012, Tim Stratton in 2013, William H. (Bill) Brant in 2014 and Tom Wingrove in 2015. ACEC-MB honours Jerry Cousin, P. Eng. with the Lifetime Achievement Award for 2016.

## Jerry Cousin, P. Eng.

Jerry has been a leader in the engineering industry for 45 years, with more than 35 years as a consulting engineer in Manitoba. Jerry graduated from the University of Manitoba in 1971. He began his career with the Manitoba

Development Corporation, and later joined the Manitoba Department of Agriculture Rural Water Project as a Research Engineer. In 1977, Jerry worked with the Prairie Agriculture Machinery Institute and also joined the Manitoba Department of Rural Development where he served as Senior Engineer of the Agri-Water Program (now part of the Manitoba Water Services Board) until 1981.

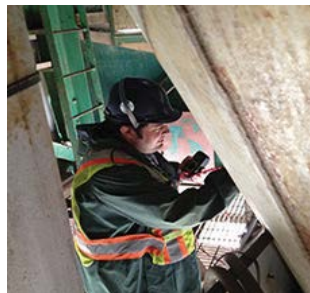
In 1981, faced with the prospective of relocating from Winnipeg to Brandon, Jerry, along with his business partner Tim Lasuik, established the firm of JR Cousin Consultants Ltd. (JRCC). The firm is now in its 35th year of operation. Jerry Cousin, with foresight, hard work, and dedication, has grown the firm from its initial two employees in 1981 to 25 full-time professionals and support staff. Since inception, the firm has maintained the same ownership, the same name, and is proud to employ several long-term employees. As president of JRCC, Jerry has had an active hand in all projects completed by the firm, and accordingly, his knowledge of municipal infrastructure throughout rural Manitoba is second to none.



Over the years, Jerry has made significant contributions to the engineering profession. Through innovative engineering, advancements in civil engineering have been experienced with the successful design and construction of unique, complex, and challenging projects. Many of Jerry's projects can be considered as successful firsts within the municipal engineering industry. Jerry has also been active researching methods to address phosphorous reduction and ammonia control as part of wastewater

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treatment, and has been involved in the design of several facultative and aerated lagoon projects. Jerry has committed to improving infrastructure in First Nation and northern communities. He has worked with over 49 First Nations in Manitoba, Ontario, and Saskatchewan to improve water and sewage treatment in their communities and to proceed with community development plans, helping communities to thrive. As well as working with numerous First Nations in Manitoba, Jerry has also worked with the majority of Rural Municipalities in Manitoba, as well as a great number of the towns, villages, and cities.

Jerry has been an active participant and member of many associations including the: Engineers Geoscientists Manitoba, Association of Professional Engineers and Geoscientists of Saskatchewan Professional Engineers of Ontario, ACEC-MB, Canadian Public Works Association, American Public Works Association, Western Canada Water and Wastewater Association, and The Manitoba Water Well Association. He has been an active supporter of engineering and technology

students, providing employment and experience opportunities through the Career Focus and Canada Jobs programs. He has served as mentor to many engineers-in-training over the years and contributed to the Red River College Manitoba Water and Wastewater School, providing presentations and lectures on various aspects of water treatment and distribution and wastewater collection and treatment.

Jerry has been a member of ACEC-Manitoba since 1983. He has sat on many ACEC-MB committees including the Transportation Committee; Water and Wastewater Committee; Energy; Science and Technology Committee; City of Winnipeg Committee; Planning Strategy Committee and the WSB/PFRA Committee, which he also chaired. He was elected to the ACEC-MB Council (CEM at that time) in 1990 and served a four-year term. He was asked to serve as president of ACEC-MB, although business obligations and other commitments prevented him from accepting the post. Jerry was

instrumental in laying the groundwork for greater exposure and representation with the Manitoba Water Services Board and Prairie Farm Rehabilitation Association and developing policies for selecting consulting engineers, contributing both time and expertise to further advance the role of the association and the use of consulting engineers.

Jerry is an active member of his community and has been a member of various committees and organizations including the Grain Exchange Curling Club, the Heather Curling Club, the St. Vital Curling Club, and the Lake of the Woods Association. He has been a long standing member of the Progressive Conservative Party and was active in the Chamber of Commerce for several years. He is a member of the Roman Catholic Parish of St. Timothy. In addition to his own community, Jerry provides community support on a wider scale. He contributes to many Aboriginal and First Nation communities and supports youth sports, festivals and feasts, holiday initiatives, and elder care. ☺



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- We use vegetable oil-based inks to print the magazine. This means that we are not using resource-depleting petroleum-based ink products and that the subsequent recycling of the paper in this magazine is much more environment friendly.
- During the printing process, we use a solvent recycling system that separates the water from the recovered solvents and leaves only about 5% residue. This results in reduced solvent usage, handling and hazardous hauling.
- We ensure that an efficient recycling program is used for all printing plates and all waste paper.
- Within the pages of each issue, we actively encourage our readers to REUSE and RECYCLE.
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# Powering the World Forward

Winnipeg firm celebrates 50 years as global leader in power transmission

## Teshmont Consultants'

Winnipeg headquarters tucks neatly away from the bustle of cars on Waverley Street, behind a strip mall and a stand of trees, inconspicuous to the waves of daily commuters who travel the popular north-south city route. The firm specializes in one thing, also unseen to the naked eye, which makes or breaks daily life for people from Manitoba to Malaysia: the reliable transmission of electrical power.



Teshmont President, Ralph Kurth.

“Without power transmission, nothing gets done in terms of economies moving forward, healthcare, or industry in all major forms,” says Teshmont President, Ralph Kurth.

In developed nations, reliable energy is expected. You flick a switch, a light goes on, your computer fires up, your must-have pot of coffee begins to brew. It's not until a calamitous event, like the 2003 blackout that temporarily left some 50 million people in Ontario and eight US states in the dark, that we are reminded how much we depend on a reliable source – and delivery method – for that energy. For 50 years, Teshmont has been a global leader in delivering massive amounts of electrical power from source to community. They've worked on projects in more than 40 countries including Scotland, Africa and Pakistan, but they got their start right here in Manitoba,



AltaLink WATL Sunnybrook Converter Station

with what was originally to be a one-and-done assignment.

In 1966, Atomic Energy Canada solicited engineering firms to perform studies on how best to deliver hydroelectric power from the Nelson River, a long span of water connecting Lake Winnipeg to Hudson's Bay at Manitoba's northernmost tip, down to the load centre in the southern part of the province. Power experts from a trio of Canadian firms (Templeton Engineering, Shawinigan Engineering, and Montreal Engineering) pooled their expertise and determined that a large High Voltage Direct Current (HVDC) electric transmission system would be the most effective and efficient way to move power

over several hundred kilometres. Two advantages HVDC offered over alternating current (AC) power systems were that it was less costly, as a result of lower losses and cheaper transmission lines, and that it has a greater power density (e.g. smaller towers, smaller transmission line right-of-way requirements, etc.) thereby lessening its environmental impact.

According to Kurth, every component of HVDC systems then and now must be designed and fabricated to the unique specifications of what the job, and client, require. In 1966, only a few firms in the world had expertise in such niche builds. This trio of Canadian engineering firms, which subsequently renamed itself Teshmont Consultants (Teshmont being



MH Synchronous Condenser



Nalcor HVDC Transmission Line



Thailand-Malaysia HVDC Converter Station (Thailand)



Calgary Staff



Winnipeg Staff

a mash-up of the first few letters of each company name: TE-SH-MONT) was about to join their ranks.

Manitoba Hydro hired Teshmont to complete the engineering of the Bipole I project (the first HVDC transmission line from the Nelson River), then Bipole II, and five decades later they are working together on Bipole III. Hydro's success is due, in part, to their long-standing relationship with Teshmont, and their faith in the firm is evident: they hold a 40% ownership stake in the company.

From its earliest days working with Hydro, Teshmont wrote countless

technical papers on HVDC systems. Their expertise attracted new clientele from around the world, allowing them to expand from one provincial utility's in-house HVDC experts, to global leaders in the field. At home and abroad, Teshmont continued to apply the knowledge they gained in Manitoba to new projects, and vice versa. "We're always building upon things we've seen in the past," says Kurth. "And we keep tabs on things we aren't involved with. It's all about learning, and providing clients with the benefit of what we've learned as we've gone on within the industry."

To get to the cutting-edge of an industry, it helps to know what happened in the past. Kurth says Teshmont's ability to retain employees for the long term has helped them create a culture where knowledge passes down from generation to generation. "When I started [in 1985] the company had about 30 or 35 employees, and I was the 'new guy' for seven years," he says. "All of those people were my mentors, and to them we owe a debt of gratitude."

Kurth himself is a convert of sorts. His background in computer engineering and expertise in microprocessor design seem to lend themselves to the quick-paced world

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of Silicon Valley. But a couple of gigs as a summer student at Teshmont swayed him.

Today, the culture at Teshmont continues to be a draw for its 100 or so employees, who work out of their Winnipeg headquarters, or their Calgary office, which opened in 2010. Like the scope of the company's practice, its employee mix is truly international, and recruiting both locally and globally is standard practice according to Kurth.

"In our [Winnipeg] office, we have 18 different nationalities, and 20 different languages," says Kurth, who adds that one of the best investments they ever made to help integrate employees from different cultural backgrounds was the ping pong table they purchased for the lunch room. Staff surveys happen semi-annually, and keeping employees happy and productive, says Kurth, is as much a priority as customer service. "It's their skills and abilities that we sell to clients," he says.

Heading into the next half century, experts predict a rapid shake-up of the energy status quo as dependency on fossil fuels yields to renewable energy sources: solar power, wind, and hydroelectricity.

Kurth sees a wealth of new opportunities for Teshmont in this context as HVDC is an effective way to integrate renewable energy sources into the conventional energy grid. It does so by bridging the geographical gaps between remote, independent renewable energy sources – a wind farm on a plain, a hydroelectricity producing river, a solar field in a desert – and then tying them together. This allows them to serve as fail-safes in the event that doldrums, a drought, or a rainy season hampers their ability to generate power.

As rosy as the future might look, Kurth tempers his enthusiasm with the fact that the costs to build large HVDC systems, and even more so the political willingness to make them happen, have and will continue to pose significant challenges. "A lot of these projects get delayed for many years and some even die because of political pressure," says Kurth, pointing to one such build in Minnesota, which took 10 years to get the government green light, but only 18 months to complete.

When asked if the company has a single, legacy project, Kurth cites a couple in Brazil and China for their sheer



Egypt-Jordan Cable Laying

scope, but heralds the overall benefit Teshmont delivers to communities here and abroad as the company's greatest accomplishment. "When I take a look at all the projects we work on, billions of people around the world have access to reliable electricity. You can't help but feel proud of that." 🌍

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# Industry Reception Recap

On March 10, TWICE hosted its 3rd Annual Industry Reception at FortWhyte Alive. Wonderful food, fantastic speakers, and a delightful venue made for a very enjoyable and informative evening.

We were delighted to hear from three distinguished speakers on three very important topics:

- Where are we now as an industry?

**Dr. Marcia Friesen, P.Eng.**, provided an overview and interpretation of the results of the industry survey TWICE completed last year;

- Where should we be trying to go?

**Andrea Watts, P.Eng.**, a member of the APEGM Committee for Increasing the Participation of Women in Engineering, provided an explanation and discussion of Engineers Canada's 30 by 30 Initiative, with an emphasis on why diversity and reaching a

participation rate of 30% for women is critical to our profession; and

- How can we get there?

**Dr. Annemieke Farenhorst**, the Prairie NSERC Chair for Women in Science and Engineering, provided strategies companies can implement to increase gender diversity and recruit and retain women in their companies.

## TWICE Committee

The TWICE committee formed in 2013 to provide strategic advice on matters related to increasing diversity in the consulting engineering industry, specifically increasing the retention of women in member organizations. The committee's vision centres on utilizing analysis and consultation to formulate recommendations and best practices to foster overall growth in the representation

of women in the profession. This research will also be applied to develop best practices for life-work balance concerns that are relevant to all industry professionals – male and female.

Our committee's objectives include:

- **Outreach and Networking** through social and professional events, with the primary goal of increasing the retention of women in the consulting engineering industry. Opportunities to help professionals, at all stages of their careers, to develop a support network of like-minded individuals.
- **Research** of industry best practices aimed at increasing diversity and retention of qualified professionals.
- **Communication** in industry publications and ACEC-MB material on research findings and highlights of women in the industry. 📄

# ACEC-MB at Table for 1200

Hundreds of Winnipeggers clad in white took over the Exchange District Saturday, May 28 for a fun-filled evening of tasty food, engaging conversations, and creative table designs. It was the 3rd annual Table for 1200, an event organized by StorefrontMB to bring awareness to urban design and the built environment in the greater Winnipeg area. 150 individually-decorated tables of eight people were set up end-to-end along Waterfront Drive to create one impressive (and very long) table set for 1200 dinner guests.

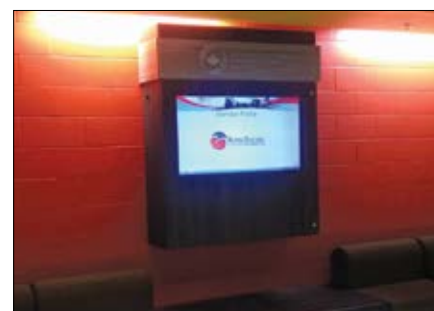
This year, ACEC-MB sponsored a table and attended the event. Image Committee members Dana Bredin and Steven Goldstine planned and decorated the Lego-themed table centrepiece, while fellow Image Committee member Morgann Beckett and ACEC-MB President Allyson Desgroseilliers and their guests filled the remaining seats. The Lego streetscape, colorful Lego-filled vases, and construction drawing place mats turned the heads and garnered complements of many passer-byers.



After the threat of rain passed without a drop, the sun shone down while 1200 guests enjoyed a delicious multi-course meal catered by chefs Mandel Hitzer of Deer + Almond, and Ben Kramer. 📄

# U of M Legacy Wall Complete

The U of M Legacy Wall is complete and installed next to the entrances of the largest lecture hall within the Engineering building giving it great visibility and traffic. The heart of the U of M Legacy Wall is a flat screen TV which is hooked into the U of M's display platform. The display is maintained by on site staff, and can be updated remotely. This allows ACEC-MB the benefit of being able to change the display as needed to advertise on campus events, and keep the content fresh with the latest award winners and company information. If you have a chance, please visit the display and if you have any feedback please let the Image Committee know. 📄



# 640 Event Recap

On the evening of Monday, March 21, 2016, ACEC-MB held its 3rd Annual 640 event at the King's Head Pub celebrating National Engineering Month. More than 30 attendees enjoyed appetizers and beer as they listened to four speakers give enthralling presentations on a wide variety of topics.

The 640 event had a distinctive presentation style, turning the generally dull PowerPoint presentation into something captivating. Each presenter had 20 slides, which cycled at 20 seconds each, but had no control over their slides. This kept them on their toes as they made sure their presentation kept up with their slides. They were up to this difficult challenge as each gave succinct and informative presentations. Afterwards, everyone continued discussing all the thought-provoking topics.

Our lucky group of presenters had unique backgrounds in engineering, which led to the diverse set of subjects. Ralph Kurth, President and CEO of Teshmont Consultants LP, gave a compelling presentation on aging electrical infrastructure, and



(From left) Nusraat Massood, Ralph Kurth, Lin Watt, Patrick Campbell

the role engineers play on correcting this imminent risk. Nusraat Massood, Program Administrator for WISE Kid-Netic Energy, presented on how important diversity is in science and engineering careers and what she is doing to encourage girls to get involved in science and engineering. Patrick Campbell, Environmental Scientist and Manager at AMEC Foster Wheeler, gave a presentation on the processes for an emergency clean-up of an

environmental spill in Manitoba. And Lin Watt, Project Engineer with Dillon Consulting, presented on her first five years of experience as a young engineer in Manitoba.

This event was a tremendous success, with hopefully more 640 events to come in the future. National Engineering Month was all about informing the public about engineering and with this event we were able to spread the word about the great and fascinating things engineers do! 🎉

# Energy Science and Technology Reception

The Energy Science and Technology Committee's Energy Reception was held on March 9, 2016.

As a part of the committee's mandate to raise the profile of member firms and generate business opportunities within the Energy Sector, the committee once again

oversaw planning and implementation of the Energy Reception. The mixer was well attended by Manitoba Hydro and ACEC-MB members. Brief introductory comments from Manitoba Hydro CEO Kelvin Shepherd provided his perspective on his new role with the organization, along with updates

on projects and opportunities facing Manitoba Hydro. For the second year the event was held at The Metropolitan Entertainment Centre, and the format was networking focused. Feedback received from those in attendance indicated the event was a success. 🎉

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# 18th Annual ACEC-Manitoba Golf Tournament



The Association of Consulting Engineering Companies – Manitoba (ACEC-MB) held its 18th Annual Golf Tournament on Wednesday May 11, 2016, at the Pine Ridge Golf and Country Club. This year's tournament had an attendance of 112 registered golfers. Participants were greeted by some clouds and the threat of rain (or a bit of rain at times) but the sun managed to peak through during the late afternoon to make for a nice day of golf. No snow is always a bonus! A fantastic dinner and great prize draws concluded the evening.

We congratulate the first place team Jesse Carels, Mike Sippola, Curt Armstrong and Scott Harmatiuk.

Second Place winners were the team of Kurt Chekosky, Scott Bezak, Wally Jackson and Rob Borody.

Most honest team winners were Dennis Rodriguez, Andy Boboski, Dana Bredin and Silvestre Urbano.

ACEC-MB would like to thank the players, prize, hole and event sponsors for making this event successful. ACEC-MB is proud to donate \$1,500 from this year's tournament to The Movement Centre of Manitoba, a non-profit organization that is committed to improving the physical health of children and adults with physical disabilities.

Pictured at right are co-chair Reynold Cabigting (Sison Blackburn Consulting Inc.), Justin Burley, communications coordinator, The Movement Centre of Manitoba, and Michael Van Helden (TREK Geotechnical Inc.) golf committee member. ☺



First place team: Jesse Carels, Mike Sippola, Curt Armstrong and Scott Harmatiuk.



Second Place team: Rob Borody, Wally Jackson, Scott Bezak and Kurt Chekosky. Shown with the team is David Fuchs, Golf Chair.



Most honest team: Dennis Rodriguez, Andy Boboski, and Dana Bredin (not pictured: Silvestre Urbano). Shown with the team is David Fuchs, Golf Chair.



Keep your calendars open for the 19th annual tournament May 17, 2017 at the Pine Ridge Golf and Country Club.

# Message From the Chair

Michael MacKay, P.Eng.

Over the past two years, I've noticed that generational diversity in the workplace has become a favourite topic for keynote speakers and discussion panels. Most of these conversations seem to revolve around how companies or managers can accommodate the different preferences and needs of the five generations of workers now found in the workplace. I see things a bit differently: Successful teams will find ways to accommodate the different needs and preferences of their teammates. Why should this be left up to management? I would like to argue that young professionals (YPs) can and should have a leading role in fostering the inevitable and necessary change that will occur as the five generations learn to work together.

Recognizing that other generations have differing opinions and values is a critical step in learning to accommodate each other. I will avoid getting into the details as to why (see Google for more details), but there are reasons why Gen X-ers and Baby Boomers tend to find Millennials to be generally high maintenance and entitled. There is an irony here, since at one point during the '80s and '90s, Gen X was similarly accused of being entitled and "rebels without a cause." Even the Baby Boomer generation was sometimes labelled as "entitled, long haired, socialists." My point is that society and the workplace tend to initially overreact to the real differences between the generations. Over time, we pull back to a more rational response to the differences that is less negative, once common ground and understanding have been established. I think that there are ways YPs can help speed that process along:

1. **Have a conversation with your supervisor:** Don't assume that your supervisor understands your values or motivations. It's easier for

iGen (aka Generation Z)	1996 and after
Millennials (aka Generation Y)	1977 to 1995
Generation X	1965 to 1976
Baby Boomers	1946 to 1964
Traditionalists	1945 and before

you to start the conversation with your supervisor about what it is that you value and are looking for in your career than the other way around. This communication can go a long way towards fostering understanding. For example, perhaps you believe that because you are tech-savvy and capable of independently completing your next assignment, you should be able to work flex hours. You believe that people should be evaluated on the merits of their work alone, and not how, when or where they do it. If you have a Baby Boomer boss, you may find that they value the concept of your work team sticking together and being in the same space as they work through challenges. Unless the dialogue as to how the values and priorities of all parties can be accommodated gets started, one or both parties will be left with unconsented compromise and inevitable frustration. Also, it is important that both sides learn the other's values and perspectives, so that understanding goes both ways.

2. **Take initiative:** Once both parties are familiar with the other's values and priorities, it is no longer incumbent upon the manager to lead all initiatives for change. If you or the YPs in your workplace fit the Millennial mold and value teamwork, feedback, mentorship and a flexible work schedule, and would like to see more of that in your workplace, then why not take some initiative and help your manager out by thinking up and

proposing some initiatives? No one is going to know what will meet your needs better than you. Just remember that it is a two-way street: you need to find ways to meet your supervisor's needs and vision for your team as much as your work needs to meet your needs.

3. **Show Leadership:** Another suggestion is for more intermediate YPs to take leadership or mentorship roles with younger Millennials and iGens (Gen Zs). The differences between Millennials and iGens is smaller than that of Baby Boomers and Gen X-ers. Millennial and iGen relationships are more likely to have similar career priorities and values, and can benefit all parties involved: less work for more senior staff, good leadership experience for the intermediate YP, and a more relatable mentor for the junior staff. Also, investing time in learning how to better mentor summer students and EITs will not only teach valuable management skills, but will improve the workplace experience for the junior staff.

YPs should make the choice to engage and be a spark for change. YPs should not be passive and expect management to do it all on their own. If YPs bring their energy and enthusiasm to finding ways to better accommodate everyone's values, positive change will result. Don't underestimate the impact that YPs can have. 🌟

# Events Summary

## 2015 ACEC Young Professionals Gala

The 7th Annual Young Professionals Gala took place on October 21 at Bergmann's on Lombard. This year's Gala was a great success, with more than 100 in attendance. The event began in the early evening with refreshments, appetizers, and conversation.

Kristen Poff of WSP (YP Chair), initiated the formal portion of the evening by introducing Allyson Desgroseilliers (Vice-President) from Amec Foster Wheeler to bring greetings from the ACEC-MB Board. Following, Kristen Poff introduced the keynote speaker, Dr. Gerry Price.

Dr. Price, CEO of Price Industries, delivered a compelling discussion on the business model for his company and how it helped to survive economic hardships. Dr. Price was the 2013 APEGM Leadership Award recipient and has been actively involved in Manitoba through support of the University of Manitoba EITC capital campaign and the Friends of Engineering Program, among many others. He has been active within the engineering profession association, as well as numerous philanthropic undertakings.

## 2015-2016 ACEC-MB Mentorship Program

The YPC continued the ACEC-MB Mentorship Program for its third year. The Program pairs industry professionals with University of Manitoba engineering students allowing the students to gain insight and understanding of the consulting engineering sector. The goal of the Program is to give students an introduction to the challenging and rewarding career opportunities that exist in consulting engineering.

Three formal events were held as part of the Program. The first event provided a venue to introduce students to their mentors. The UMES wine & cheese event, sponsored by ACEC-MB, immediately followed the kick-off event and was well attended by mentors and students from the program.

The second event was a panel discussion featuring Ken Drysdale, PEng (Accutech Engineering), Dr. Rob Kenyon, PEng, Ph.D (KGS Group), and Robyn Koropatnick, PEng (Teshmont Consultants) as panelists. The topic was *The Business Side of Consulting Engineering* and engaged the senior engineers to explore the importance of business development, client satisfaction, and how junior engineers can add value to these areas.

The final event mingled all student and mentor participants in a final networking event. The 2015-2016 program coordinators: Michael MacKay (KGS Group), Kelsey Rutherford (SNC-Lavalin), and Dan Nenadov (Accutech Engineering), and all participants from the 2015-2016 ACEC-MB mentorship program. They encourage all mentors to consider volunteering again this September.

## Breakfast Seminar – Keystone Award Winning Project


On November 3, the ACEC Young Professionals Committee hosted a breakfast seminar presentation on the



2015 ACEC Young Professionals Gala


2015 Keystone Award Winning Project; the Mayo B Hydro Enhancement Project. The event was held at the offices of AECOM and was attended by 13 young professionals from the consulting industry in Manitoba.

Ryan Dobson of KGS Group gave the presentation, which focused on the construction of the intake tunneling and rock stabilization for the Mayo B tunnel located in The Yukon. The tunnel construction allowed for the Mayo Hydroelectric Facility to increase its power production from 5 MW to 15 MW within a two-year fast track schedule. The complex design required 300 metres of tunnel construction through poor bedrock conditions, under challenging artesian groundwater pressures.



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annually eliminating 25,000 tonnes of greenhouse gas emissions.

For those who could not attend, the Mayo B Hydro Enhancement Project is also featured in the 2015 issue of MB Consulting Engineer, ACEC-MB's annual publication.

**2nd Annual ACEC YP Curling Bonspiel**

On March 24, Young Professionals gathered for the 2nd Annual Young

Professionals Curling Funspiel. The event was once again held at the Pembina Curling Club. This year's event had five teams competing for the prestige and glory of becoming curling champions. The bonspiel was set up in a bingo curling format, which meant the rules for scoring each end were not revealed until all rocks had been thrown. The champions received tickets to the ACEC Awards Gala held at The Metropolitan Entertainment Centre on April 5.

KGS had the winning team of:

- Shelley Burns,
- Josee Remillard,
- Devin Watson, and
- Chris Sararas.

The runner-ups, right on their heels, were:

- Leah Daniel,
- Charlie Ulloa,
- Amanda LaCoste, and
- Tyson Ehnes

In addition, Bill Menzies of Dillon Consulting Ltd., won the Closest to the Button competition.

After curling, participants enjoyed food and beverages upstairs at the Pembina Curling Club. We look forward to seeing many returning competitors at the 2017 Bonspiel! 🍷



2nd Annual ACEC YP Curling Bonspiel

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# Year in Review

Christine Harries, ing., Chair, ACEC Young Professional Network

**T**he Young Professional Network of the Association of Consulting Engineering Companies of Canada aims to support the active groups spread out in the Canadian provinces and territories. The first local group was formed in Alberta in 2005, and groups continue to be created. The most recent developments are in Ontario, where the Ottawa team is helping launch a new section in Vaughn. Provinces and territories host conferences, technical site visits, networking, after work get-togethers, and much more. The western provinces continue to be very successful with their breakfast seminars and YP conferences, such as the second annual conference held this year in Calgary. A new initiative seen in several provinces this year is the inclusion of other young professionals from other sectors at our networking events. We have been joined by lawyers, accountants, urban planners, architects and many more. The goal is to create a strong local community of young professionals that can exchange and learn from each other. This “unit” can then work together on a multitude of initiatives serving the community.

The YP groups actively promote consulting engineering in universities, engineering to young children, and the positive contribution engineering makes in society. In Quebec, project Parallèle 40 places colourful art (patterns, stencils) on concrete columns below the TransCanada Highway 40. The goal to render this space below the structure a green space by planting grass and installing benches was an initiative by a group of Quebec YPs as part of the greater jevoiemontreal project. The project also consists of YP consulting engineers mentoring children and including them in engineering-like activities, such as measuring column heights, making a plan view of the area, and taking distance measurements. <https://fairemtl.ca/fr/je-fais-mtl>

Many YPs represented ACEC at various student competitions this year, including: the Canadian Engineering competition and the Great Northern Concrete Toboggan Race. The ACEC national leadership conference for 2016 has changed formats and will be titled: Driving Business, Shaping Policy. The YPN has organized a special session for Young Professionals by Paul Smith,

MA, MBA titled *The Flywheel Effect*. This session is geared towards leaders of the future. It introduces concepts seen in MBA courses and opens the minds of listeners to principles of best practice and management. Consider joining us in Ottawa in October for the conference: [http://www.acec.ca/events\\_awards/ntl\\_conf/about.html](http://www.acec.ca/events_awards/ntl_conf/about.html)

The focus for next year remains to support each province and territory as they continue building what works in their own area. Valuable tips such as hosting sessions in prime downtown locations, as close to as many firms as possible to limit displacement, have been a huge factor in event participation. The heartbeat of each province and territory varies as each is growing organically with inspiration coming from within. However, the goal of the YPN and YP provincial and territorial groups remain common as stated in the YPN vision statement: “To promote best practices and leadership while also creating a network of cross-disciplined and diverse engineers who will be the future leaders of the Canadian consulting engineering industry.” [http://www.acec.ca/about\\_acec/YPN.html](http://www.acec.ca/about_acec/YPN.html)

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1.0 <	<= 1.5
1.5 <	<= 2.0
2.0 <	<= 2.5
2.5 <	<= 3.0
3.0 <	<= 3.5
3.5 <	<= 4.0
4.0 <	<= 4.5
4.5 <	<= 5.0
5.0 <	<= 5.5
5.5 <	<= 6.0

# 2016 Member Services Guide

## Company listings by category

### **Aerospace**

AECOM Canada Ltd.  
KGS Group  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Agriculture**

Associated Engineering  
KGS Group  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Building Science**

AECOM Canada Ltd.  
Associated Engineering  
Crosier Kilgour & Partners Ltd.  
KGS Group  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Chemical Engineering**

Hatch Ltd.  
Stantec Consulting Ltd.  
WSP Canada Inc.

### **Communications/Telecommunications**

KGS Group  
MMM Group Limited  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Electrical**

AECOM Canada Ltd.  
Associated Engineering  
CGM Engineering Ltd.  
KGS Group  
Hatch Ltd.  
MMM Group Limited  
Stantec Consulting Ltd.  
Teshmont Consultants LP  
Tetra Tech WEI Inc.  
Tower Engineering Group  
WSP Canada Inc.

### **Energy**

AECOM Canada Ltd.  
Amec Foster Wheeler  
Environment & Infrastructure  
Associated Engineering  
Hatch Ltd.  
KGS Group  
MMM Group Limited  
Stantec Consulting Ltd.  
Teshmont Consultants LP  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Environmental**

AECOM Canada Ltd.  
Amec Foster Wheeler Environment & Infrastructure  
Associated Engineering  
ENG-TECH Consulting Limited  
Hatch Ltd.  
JR Cousin Consultants Ltd.  
KGS Group  
MMM Group Limited  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Fisheries**

AECOM Canada Ltd.  
Amec Foster Wheeler  
Environment & Infrastructure  
KGS Group  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Forestry**

Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Geotechnical**

AECOM Canada Ltd.  
Amec Foster Wheeler  
Environment & Infrastructure  
ENG-TECH Consulting Limited  
Hatch Ltd.  
JR Cousin Consultants Ltd.  
KGS Group  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Industrial**

AECOM Canada Ltd.  
Amec Foster Wheeler  
Environment & Infrastructure  
Associated Engineering  
Crosier Kilgour & Partners Ltd.  
Hatch Ltd.  
KGS Group  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
Tower Engineering Group  
WSP Canada Inc.

### **Marina and Coastal**

ENG-TECH Consulting Limited  
Hatch Ltd.  
MMM Group Limited  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Materials**

Amec Foster Wheeler  
Environment & Infrastructure  
Crosier Kilgour & Partners Ltd.  
ENG-TECH Consulting Limited  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Mechanical**

AECOM Canada Ltd.  
Associated Engineering  
CGM Engineering Ltd.  
Hatch Ltd.  
KGS Group  
MMM Group Limited  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
Tower Engineering Group  
WSP Canada Inc.

### **Mining**

AECOM Canada Ltd.  
Amec Foster Wheeler  
Environment & Infrastructure  
Associated Engineering  
Hatch Ltd.  
KGS Group  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.



### **Municipal**

AECOM Canada Ltd.  
Associated Engineering  
Barnes & Duncan  
ENG-TECH Consulting Limited  
Hatch Ltd.  
JR Cousin Consultants Ltd.  
KGS Group  
MMM Group Limited  
Sison Blackburn Consulting Inc.  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Planning**

AECOM Canada Ltd.  
Associated Engineering  
Hatch Ltd.  
JR Cousin Consultants Ltd.  
KGS Group  
MMM Group Limited  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Project Management**

AECOM Canada Ltd.  
Amec Foster Wheeler  
Environment & Infrastructure  
Associated Engineering  
Crosier Kilgour & Partners Ltd.  
ENG-TECH Consulting Limited  
Hatch Ltd.  
JR Cousin Consultants Ltd.  
KGS Group  
MMM Group Limited  
Sison Blackburn Consulting Inc.  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
Tower Engineering Group  
WSP Canada Inc.

### **Structural – Buildings**

AECOM Canada Ltd.  
Associated Engineering  
Crosier Kilgour & Partners Ltd.  
Hatch Ltd.  
KGS Group  
MMM Group Limited  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
Tower Engineering Group  
WSP Canada Inc.

### **Structural – Other**

AECOM Canada Ltd.  
Associated Engineering  
Crosier Kilgour & Partners Ltd.  
ENG-TECH Consulting Limited  
Hatch Ltd.  
KGS Group  
MMM Group Limited  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
Tower Engineering Group  
WSP Canada Inc.

### **Surveying**

AECOM Canada Ltd.  
Associated Engineering  
Barnes & Duncan  
ENG-TECH Consulting Limited  
Hatch Ltd.  
KGS Group  
MMM Group Limited  
Sison Blackburn Consulting Inc.  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Temporary Works**

Associated Engineering  
Hatch Ltd.  
KGS Group  
MMM Group Limited  
WSP Canada Inc.

### **Transportation**

AECOM Canada Ltd.  
Amec Foster Wheeler  
Environment & Infrastructure  
Associated Engineering  
Hatch Ltd.  
JR Cousin Consultants Ltd.  
KGS Group  
MMM Group Limited  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.

### **Water Resources**

AECOM Canada Ltd.  
Amec Foster Wheeler  
Environment & Infrastructure  
Associated Engineering  
Hatch Ltd.  
JR Cousin Consultants Ltd.  
KGS Group  
MMM Group Limited  
Stantec Consulting Ltd.  
Tetra Tech WEI Inc.  
WSP Canada Inc.



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# what's ailing the self-employed?

How health and disability insurance can help

## The Self-Employment Challenge

Being your own boss has its perks. But without an employer's group benefits, self-employment also means fending for yourself in case of illness or disability.



Over two-thirds of surveyed self-employed individuals are concerned about their lack of access to medical coverage and insurance.<sup>1</sup>



8 in 10 Canadians are concerned about the government's ability to fund health care, the cost of longterm care, and having enough money if they become disabled or seriously ill.<sup>2</sup>

## The Role of Insurance

Supplementary health and disability income insurance plans help protect against financial loss due to illnesses or accidents.

### Why health insurance?

Canadian families are spending an **increasing share of their household income** on health care.<sup>3</sup>

Households in the 3 top income quintiles had an average:<sup>4</sup>

- **39% increase** in dental spending
- **24% increase** in prescription drug spending

### Why disability insurance?

• **1 in 3** people will be disabled for 90 days or more at least once before they reach age 65.<sup>5</sup>

• **49%** of bankruptcies and mortgage foreclosures are due to disability.<sup>6</sup>

• **A disability of over 90 days** is likely to last three years or more for a 35-year-old man or woman, and four years or more for a 45-year-old man or woman.<sup>7</sup>

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<sup>1</sup> Human Resources and Skills Development Canada: 2006 Survey of Self-Employed Individuals: Perceptions of Benefit Coverage, May 2006.

<sup>3</sup> Chaplin R, Earl L. Household spending on health care. Health Reports 2000; 12(1): 57-65.

<sup>5</sup> Canada Life and Health Insurance Association, A guide to disability insurance, November 2012.

<sup>7</sup> Disability Insurance: Where Will the Money Come From If You're Disabled? Canadian Life and Health Insurance Association, January 2004.

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<sup>2</sup> Canadians at Financial Risk: 2013 Canadian Life Insurance Ownership Study Highlights, LIMRA, 2013.

<sup>4</sup> Statistics Canada: Trends in out-of-pocket health care expenditures in Canada, by household income, 1997 to 2009 (April 2014).

<sup>6</sup> Get Sick, Get Out: The Medical Causes of Home Mortgage Foreclosures. Health Matrix: Journal of Law-Medicine, Vol. 18, No. 65, 2008.

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