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Official publication of the Association of Consulting Engineering Companies - Manitoba

VOLUME 6 · MMXV

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**CTTAM 2015**  
November 6 and 7  
WINNIPEG

This year the Certified Technicians and Technologists Association of Manitoba (CTTAM) will be celebrating a significant milestone of 50 years! For the past 50 years, CTTAM's members have played a vital role within engineering and applied science industries in Manitoba.

Founded in October of 1965 as MANSCEET (Manitoba Society of Certified Engineering Technicians and Technologists) W.A. Habington, the Associations' first elected president, represented a membership of 39. Today, CTTAM membership has grown to over 3200 members. Impressive!

We are excited to announce CTTAM's 50th Annual General Meeting (AGM) and Anniversary Events scheduled for November 6 and 7, 2015. We will be celebrating this milestone in the company of old and new acquaintances, exploring our past, present and future as we listen to the wisdom of our great keynote speakers.

Friday's event, hosted by the Young Leaders Committee, will be located at the Assiniboine Park Zoo, Journey to Churchill facility. It will mark the launch of CTTAM's new Mentorship Program which will focus on guiding CTTAM's newest members to success, mentored by those experiencing it firsthand. The Mentorship Keynote Speaker, Priti Shah B.A., LLB., C. Med., will be discussing the importance of mentors and how it has impacted her professional and personal journey.

Saturday's events include the 50th AGM and culminate with the 50th Anniversary Gala Dinner, both located at the Royal Aviation Museum of Western Canada. We will have the opportunity to celebrate newly certified members as well as acknowledge the accomplishments of our membership from a cross-section of areas and experience. We are really excited to announce the Gala Keynote Speaker, Michelle Dagnino, Generational Change Expert, an international speaker who specializes in multi-generations in the workforce.

This is going to be a great event and what better opportunity to acknowledge the contributions of your fellow technicians and technologists!

It is our hope that you will join us in celebrating CTTAM's Past, Present and Future...the Next 50 Years!

For more information on events, young leader's mentorship opportunities, registration and sponsorship please visit [www.cttam50th.com](http://www.cttam50th.com).

Kindest Regards

*Tracey Kucheravy, C.E.T.  
Nathalie Emond, C.E.T., M.Ed., B.Sc.  
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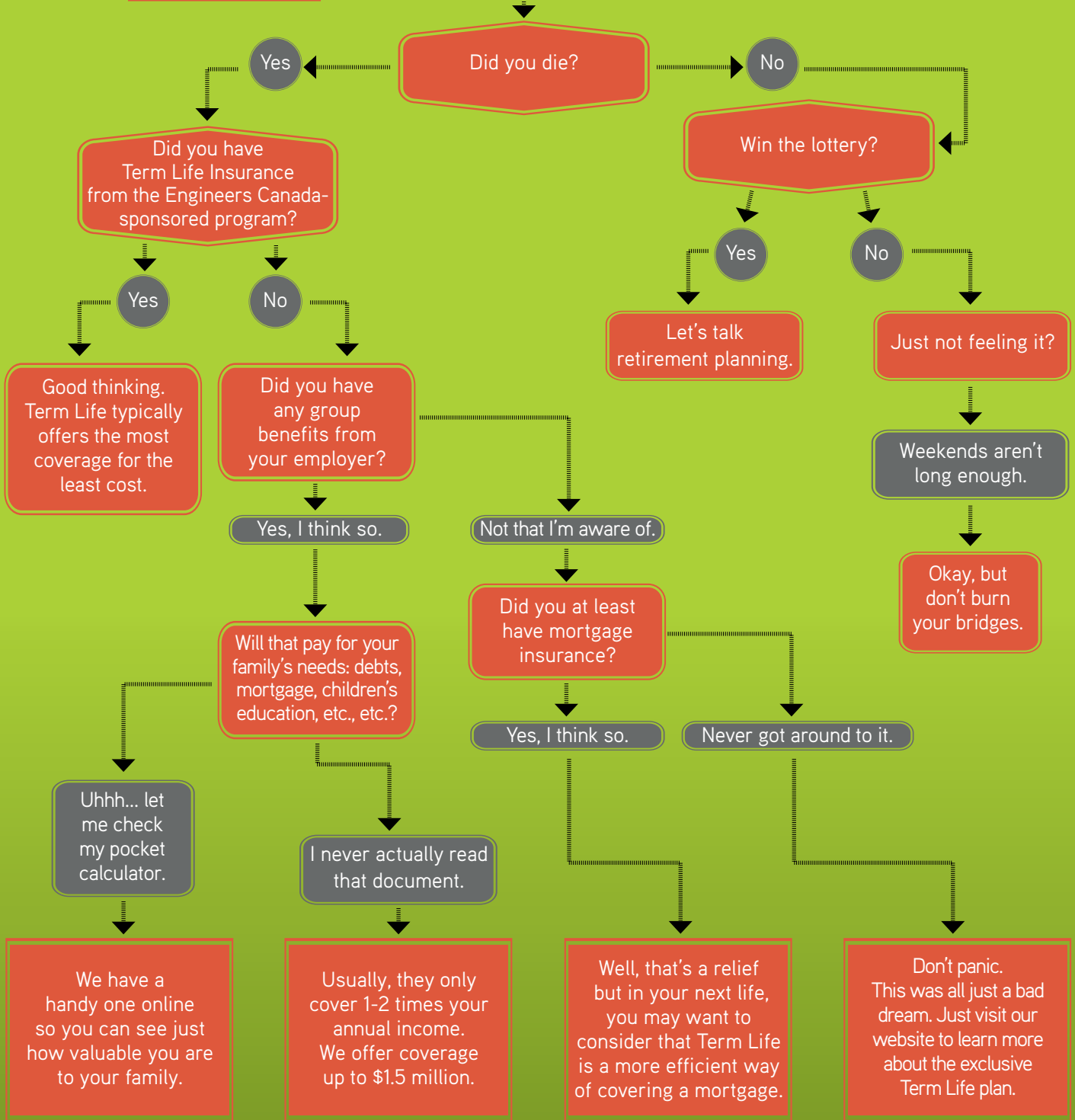


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Alana Gauthier, P.Eng.

## Strategic plan for ACEC-MB 2015-2016

I am proud to serve as ACEC-Manitoba's President for the 2015-2016 term. My sincere thanks extend to Past President Cameron Dyck, the ACEC board, Shirley Tillett and all of our amazing volunteers for all of their hard work.

As we navigate the future of ACEC, it is vital that we continue to be mindful of the interests of all our members. Being on the ACEC-MB Board has made me very aware of all of the initiatives that we are pursuing as an organization. ACEC-MB is working to increase our profile with government, change legislation that affects our member firms and their employees, provide strategic advice on matters related to increasing diversity in the industry and promote the business interests of the Consulting Engineers of Manitoba. From chatting with colleagues at ACEC-MB events I have become aware that quite often our membership is unaware of our organization's initiatives and the value that we bring to them. One initiative that we will be doing in 2015 to address this issue is communication improvement. The YPs have an excellent system of getting information to our young professionals. We have formed an

ad hoc committee to determine how best to get information out to the rest of our membership.

One key goal of ACEC-MB is to increase public awareness of the pivotal role that consulting engineers play in the application of technology, safety and protection of society. Unfortunately you hear about engineers in the news when a bridge collapses not when engineers provide innovative solutions. We are striving through our new Government Affairs committee (formed in 2014) to improve our communication with provincial and city government and promote the consulting engineering sector.

Changing legislation is an uphill battle and will require a lobbying plan and the willingness of the association to become a trusted advisor. Other provincial ACEC organizations make statements on large infrastructure projects in the media. I believe we need to do the same to increase our visibility. One initiative that I am heading is issuing press releases supporting initiatives such as the Pipeline East which benefit our membership. We will also approach other organizations with similar goals and ask them to support our initiatives,

which will help provide the numbers to make our voice heard. Our target is to have government approach ACEC-MB when they are drafting policy that has an impact on consulting engineers.

A two-tier coordinated strategy of approaching both the policy makers and the government officials is required to change legislation. I ask that anyone who is interested in this initiative to contact me. We will be trying to organize a Lobbying 101 session in the fall. Everyone is welcome, so previous lobbying experience although appreciated is not required.

We are also coordinating changes to federal legislation with ACEC-Canada. One initiative is to get changes to CN1 and CN2 with AANDC. We will be meeting with local representatives while our counterparts in Ottawa will be meeting with the people who can change the documents.

We are fortunate to have amazing, hardworking volunteers. John Gamble from ACEC-Canada indicated he has seen no other member organization accomplish so much with so few. I encourage anyone who's interested to please get involved. ☺

One key goal of ACEC-MB is to increase public awareness of the pivotal role that consulting engineers play in the application of technology, safety and protection of society.



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# ACEC-Canada report to ACEC-MB

## A strategic focus

ACEC-Canada is the national voice of consulting engineering. We work closely with provincial organizations like ACEC-Manitoba to create a business and regulatory climate that rewards consulting engineering firms for their expertise and contributions to society. No other profession or industry is more important to our social, economic and environmental quality of life.

This past year has presented numerous challenges to both our member firms and to the association itself. However, while the market for engineering services remains soft in some sectors, there are some encouraging signs for the future.

Over the past year ACEC-Canada, with the support of ACEC-Manitoba, has continued to see success in its strategic priority areas of public and private sector advocacy on national issues; image and profile building; client liaison and business practice support; and member engagement and communications.

## Creating opportunities in the public sector

ACEC has been at the forefront of advocating for the need for the federal government leadership and investment in public infrastructure. The recently announced \$53B Building Canada Plan and other commitments by the federal government is welcome news but much more remains to be done. This is why, with an election set for October 2015, ACEC has drafted a detailed and engaging election strategy targeted at sitting Members of

Parliament and all candidates in ridings across Canada. Leading with its tagline #VoteInfrastructure, ACEC launched a microsite site [www.VoteInfrastructure.ca](http://www.VoteInfrastructure.ca) to engage membership and the public by allowing visitors to the site the option to mail a letter directly to their personal MP and candidates asking them to make Infrastructure Investment a top election priority.

Long-term, predictable infrastructure investment is not only vital to our economic, social and environmental quality of life; it is an opportunity for our members to make a meaningful contribution to our clients and to Canadians. The business certainty offered by long-term, predictable investments allow our members to make informed business decisions that allow them to innovate, prosper and build capacity through investments human and technology resources.

## Creating opportunities in the private sector

Another area where the interests of ACEC members and the economic interests of Canada are aligned, and in which ACEC has become increasingly more active is the promotion of responsible resource development. We are supporting the approval of nationally important resource projects based on good science and sound engineering. Both traditional and renewable energy sources will continue to be important to Canada's future. That's why ACEC has spoken out publicly on the need for strategic projects like Northern Gateway,

Keystone XL and Energy East alongside continued development of renewable energy.

Recently, ACEC and its partners, including the Mining Association of Canada and the Prospectors & Developers Association of Canada, released recommendations from its study examining the cost differential between projects and mines in northern regions to comparable operations in more centrally-located areas. The study entitled *Levelling the Playing Field* reinforces the importance of infrastructure as the key to opening up regions to mineral exploration and mining development. There is significant promise for responsible mineral development in the territories and northern parts of our provinces.

These initiatives to support and grow Canada's resource sector, if adopted, will create more opportunities for ACEC-Manitoba member firms and will contribute to Canada's prosperity. 🇨🇦



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# Cultural fluency in a nutshell

M.R. Friesen, P.Eng.

Binjamin, an electrical engineer from Nigeria, immigrated to Canada in his late 20s and certified as a red seal electrician before pursuing his P.Eng. qualification in Manitoba. He told me about an “a-ha moment” he had in his first Canadian job when he started to recognize workplace differences between Nigeria and Canada. Working for a local electrical contractor, he was laid off after three months during a time in the mid-2000s when the construction sector was booming and skilled trades couldn’t find enough qualified workers. His only interpretation was that he was laid off as a matter of discrimination. As he and I talked over many months, he realized that there might be another explanation. Coming from a country with steep social hierarchies, he realized that his deeply ingrained cultural style dictated a deference and respect to the authority, direction, technical superiority of the supervisor. So, as he finished a task on the job site, he would demonstrate this respect and deference to his supervisor by sitting down and having a cigarette – even as his co-workers continued working around him. Binjamin was waiting for his supervisor to fulfill what would be the supervisor’s natural responsibility in a high-hierarchy environment like Nigeria: to notice that his employee was done the task and was ready to receive a further assignment, which the supervisor would initiate and deliver. After much conversation,

Binjamin came to see that his actions, although well-intended, were likely interpreted as lacking initiative, being lazy, and inconsiderate to his supervisor and his fellow electricians. Armed with this new understanding, he was able to adjust his approach going forward.

Manitoba welcomes approximately 15,000 immigrants annually, with a focus on recruiting immigrants in professions and occupations that match Canada’s existing and projected labour shortages. Immigration is projected to account for all net labor force growth in Canada within the next decade and all population growth within the next two decades.

Employers consistently note the strength of internationally-educated engineers’ (IEE’s) technical skills and the value of their past professional experience. So, what went wrong in a story like Binjamin’s? While red seal trades certificates, CET, and P.Eng. and other formal credentials may be significant advantages in getting a job, employers identify cultural fluency as a key determinant in whether a career will progress.

What is cultural fluency? In part, it is the ability to recognize that actions may have different meanings in different cultures. A given action that may be highly desirable or professional in one culture may be interpreted in another culture as disrespectful, an indicator of incompetence, or lacking professionalism. For example, a Canadian understanding of

assertiveness and initiative in one’s work, while positive in Canada, becomes an example of disrespect and insubordination in China. Cultural fluency encompasses the ability to recognize and understand the culture and values of the local environment – in this case, Canada – and it is a key factor in effective professional practice. Cultural fluency is evident, for example, in the ability to write a persuasive email, work effectively with clients and suppliers, participate productively in team-based work, and successfully navigate conflict situations.

Almost all IEEs have a similar story to Binjamin’s, where an encounter in Canada went wrong – and often in the high-stakes environment of the job. Consider these examples:

In a difference in workplace expectations stemming from cultural notions of hierarchy, a young, Chinese IEE avoided eye contact with her boss and stood up whenever he passed her cubicle. This was intended as a sign of respect, but she noticed that it served to isolate her from her colleagues and from her supervisor and she didn’t understand why.

In a difference in cultural orientations toward risk, an Ethiopian IEEs spent more time on a task than the budget allowed, creating frustration for the project manager. He was driven by an internal orientation toward very detailed and precise analysis, and he felt uncomfortable with the task of a “back-



of-the-envelope” analysis, even when explicitly asked for only a rough design at this stage of the project.

In a cultural difference in expectations of what it means to be a team, an Indian mechanical engineer recalled giving a colleague unsolicited input on the colleague’s tasks, but noticed that he was considered brash and meddling.

In a misunderstanding of a culturally-specific communication pattern, a Polish IEE recalled receiving feedback from her boss and thinking everything was fine. A few weeks later, she was formally reprimanded for not following up on a problem which had been repeatedly brought to her attention. She claimed unfair treatment, stating that she had not been given any indication that there were performance concerns until she received the formal reprimand. Often this stems from IEEs’ lack of familiarity with “sandwich feedback”, which is a uniquely North American feedback style in which you say something positive, then state the problem, then end with something positive. A Canadian supervisor may say, “You’ve got a good start on this report. I made some comments on Sections 2 and 4 as they need a really thorough review, but overall it’s going in the right direction” and the IEE hears “two positives plus one negative = net positive. I’m going great!”

IEEs are indeed culturally fluent in engineering practice in their home country. Their task is to identify how their norms and expectations – relative to hierarchy, leadership, communication, team, risk, and other culturally-influenced parameters – differ from those in the Canadian engineering profession. Employers need to support this transition, and long-time Canadians need to develop cultural fluency to identify the underlying dynamics of potential workplace tensions.

Whether it is the newcomer or the long-time Canadian, a culturally fluent individual recognizes there are multiple possible interpretations for a given action; she replaces a knee-jerk negative judgement or reaction with curiosity and conversation to clarify the other’s intentions. With Canada’s population becoming increasingly culturally diverse, cultural fluency will become an increasingly important skill for professional engineers. 🌐



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# What do our artifacts say about our times?

M.R. Friesen, P.Eng.

*“It is hard to imagine one’s own time as history. Or to think that someone will examine the artifacts of our time. Yet it will happen, and our artifacts will reflect our values and choices, as artifacts have done throughout the ages.”*

– Ursula Franklin

Many of us have an anecdotal understanding of how Galileo, often considered “a father of modern science”, got into trouble with the Catholic Church in the 1600s for championing heliocentrism, an understanding of the solar system where planets revolve around the sun, in a time where geocentrism was accepted as biblical. He was tried by the Church for heresy and spent the rest of his life under house arrest.

In *Seeing Further: The Story of Science and the Royal Society*, an A-list of scientists and science writers take us through other developments in science, demonstrating how what we learned in school as stand-alone milestones always came about in the context of their times. In the chapter “Lost in Space: The Spiritual Crisis of Newtonian Cosmology”, Margaret Wertheim looks beyond Galileo and traces how emerging scientific understandings of the solar system and of the nature of space challenged some of the foundations on which the Church undergirded its theology. Theological dualisms between God & humans and spirit & matter relied on the belief that space was made of an element not found on Earth: the ether. It further relied on the belief that space is nonhomogeneous. Space became “more ethereal”, purer, and closer to God the farther one moved away from the earth. Evidence of space as an infinite and homogenous vacuum – a big nothing – disrupted this necessary metaphor for the God-human relationship and literally left no room for a heaven. Wertheim traces how scientists were aware that discoveries had to be acceptable to reasonable society and could not be too far at odds with King and God.

From our 21st century vantage point, we may blithely claim that we would no longer suppress science in such ways nor allow it to be “bent” by the political and religious palates of the day. But do we really?

There are other authors who also demonstrate how science and engineering are always lived out in context: historical, legal, social, religious, and economic contexts. Consequently, the products of engineering – our technical solutions to problems for the benefit of society and humanity – always carry inherent values.

## “How a need is addressed through technology can change as the values and priorities of a society change.”

In *Beyond Engineering: How Society Shapes Technology*, Robert Pool traces the development of numerous technologies – aviation automobiles, nuclear power, and pharmaceutical developments, among others – and demonstrates how social, political, economic, historical, and legal forces shape technological outcomes. Like astronomical discoveries in centuries past, Pool also traces how inventions and technologies have to be palatable to the sensibilities of the day.

In *The Real World of Technology*, Ursula Franklin references the role of Robert Moses and the design of the New York State parkway system to demonstrate embedded values in technology. Moses was in charge of much of the public works and urban planning of New York State between 1930 and the late 1960s, overseeing the construction of \$150B in today’s

dollar of highways, bridges, public housing, and parkland. History seems to agree that Moses was extraordinarily powerful in shaping the very nature of New York City, that he championed the automobile and highways in favour of mass transit, and that his projects supported suburbanization. Under his direction, expressways were built through neighbourhoods that forever changed their nature as communities and contributed to their decline.

In a specific example, Franklin (referencing Moses’ biographer, Robert Caro) describes how the bridges

and underpasses of the New York State parkway systems are quite low, “intentionally specified by Moses to allow only private cars to pass. All those who travelled by bus were effectively deterred from the use and enjoyment of the parkland and its public amenities by the technical design of the bridges” (p. 68), and this disproportionately impacted the poor and the African-American residents of New York State. Franklin goes on to write that even at the time of Robert Moses, a political statement of the form “we don’t want Blacks in our parks” would have been unacceptable in New York State, but a technological expression of the same prejudice remained hidden in plain sight.

In the area of public health, Philip Alcabes in his book *Dread* challenges our notion of epidemics as simply physical events of disease outbreak that are explained and treated physiologically

by medicine and medical technologies. He explains how epidemics and our collective responses to them are also narratives in which we exercise our human instinct to explain what we see happening to us and around us. In constructing these narratives, social, political, and cultural anxieties are often exercised in response to our instinctive fears of death, of social disruption, and of losing way of life.

Whether it was by laws regulating interactions with lepers in the 6th century C.E., by sending black Americans to work in mosquito-infested areas in the 18th century on the assertion that they were racially immune to yellow fever, or by more recent responses to SARS and Ebola, Alcabes traces how the label of something as an epidemic and the public health response (which often includes technology implementations) are not only medical phenomena, but are also constructed opportunities to convey messages about our personal anxieties and what we find to be undesirable.

The idea that the technical specifications alone dictate the proper way for a technology to be developed or implemented is usually not correct. How a need is addressed through technology can change as the values and priorities of a society change. Consider how “social license to operate” has become part of the engineering lexicon as a requirement for new large-scale engineering projects, such as hydroelectric dams or oilfield development.

The difficulty with values and priorities is that they are often so close to us that we don't even recognize them as something distinct and personal. Especially when our values and priorities appear to be shared with most of the people we interact with regularly, we fail to recognize them as arbitrary, as just one possibility of how to see and evaluate the world. We are lulled into embracing them as absolutes. Good engineering is not only about solid technical demonstrations, efficient implementations, and novel and elegant designs. When we speak about engineering existing in order to create solutions that benefit society, we are obliged to ask, “for whose benefit?”

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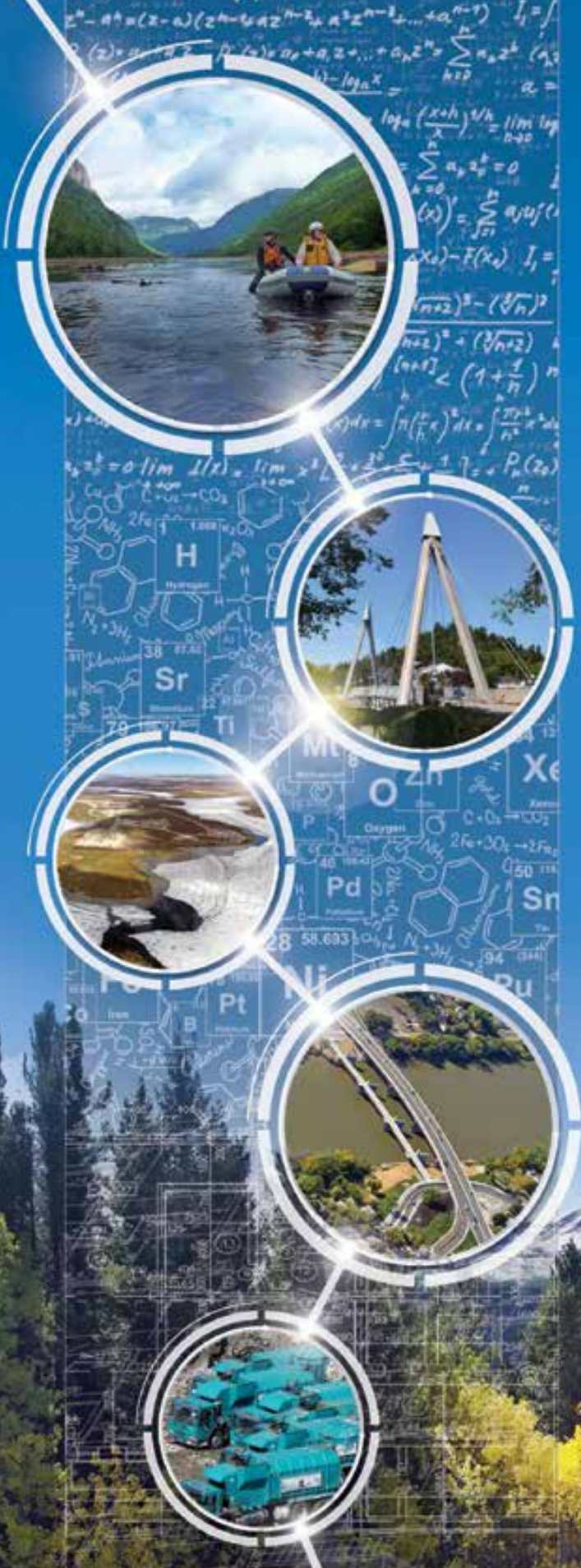







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# Inside the minds of engineering professionals: Findings of a survey of workplace experiences in the Manitoba engineering consulting services sector

Engineering managers know how important it is to have the right mix of people in place for current projects and future work. It's important, and it's also very difficult. Balancing the demands of clients, the pressures of corporate business goals, and the needs of your staff in order for them to be productive and engaged employees is a tall order.

In winter 2015, ACEC-Manitoba's Technical Women in Consulting Engineering (TWICE) committee launched a survey, inviting engineering professionals in the consulting engineering services sector in Manitoba to share their workplace experiences. We explored the factors that engineering professionals find critical to engagement and that they use to make career decisions. The committee wanted to capture a snapshot in order for ACEC-Manitoba member firms to have current and local data to understand the experiences of engineering & technical staff. The results were amenable to looking at differences between early career (0-7 yrs' experience) and more experienced (8+ yrs experience) respondents. TWICE was also interested to explore potential differences between male and female respondents as part of its committee mandate.

### **Workplace environments:**

Over half of survey respondents are regularly working more than a nominal 40 hr workweek. The vast majority of respondents are currently entitled to 3

or 4 weeks' annual vacation with their employer. A list of 24 workplace benefits was explored, ranging from pension and health benefits; compensation schemes including overtime pay, banked time, and bonus structures; paid or subsidized job training and professional fees; and various types of flexible working arrangements such as telecommuting, job-sharing, and permanent part-time positions. The survey asked engineering professionals whether the benefit is *available* to them, whether the benefit is *meaningful or appealing* to them, whether they have *used* it, and whether they have ever *felt conspicuous or experienced negative consequences* for using it.

In general, the majority of engineering professionals have a wide range of benefits available to them and have availed themselves of these benefits. The Top 5 most meaningful or appealing benefits were noted to be dental plans and paid sick time (tied for first), pension/RRSP, prescription pharmaceutical plan, flexible on-site working hours, and paid or subsidized APEGM or CTTAM dues. Some differences between groups were also noted. On-site flexible working hours was in the Top 5 of most meaningful or appealing benefits for women, but was just shy of the Top 5 of men. Paid or subsidized APEGM or CTTAM dues and overtime pay made the Top 5 most meaningful or appealing benefits for

early-career professionals, but did not appear in the Top 5 of experienced professionals. Rather, experienced professionals included extended health benefits and a prescription pharmaceutical plan in their Top 5 most meaningful or appealing benefits.

While on-site flexible working hours were considered very meaningful benefits to most respondents (in the Top 5 for women and just shy of the Top 5 for men), it was also the benefit that was most-cited as by respondents as triggering negative consequences or being made to feel conspicuous when used. The other most-cited benefits that made individuals feel conspicuous or triggered negative consequences when they used them were unpaid leaves of absence, banked time, telecommuting, and paid or subsidized job training. Looking across groups, women feel more conspicuous using telecommuting options and paid sick time than men reported feeling. Men feel more conspicuous using banked time and overtime pay than women reported feeling. Early-career professionals feel more conspicuous using telecommuting options, paid leaves, extended health benefits, short-term disability, and long-term disability relative to more experienced professionals, while the latter group feel more conspicuous using banked time, overtime pay, and paid job training than the former group reported feeling.

**How the survey was administered:** The survey was created in SurveyMonkey and administered online with anonymous participation. The ACEC-MB Executive Director sent an email invitation with the survey context and web link was sent to 67 contacts at 30 ACEC-MB Principal Member Firms in January 2015. These 67 contacts were asked to forward the invitation to all engineering employees and technical staff in their firm, including EIT/GITs, CETs, PEng./PGeo, environmental scientists, biologists, and other technical and scientific staff. This represents approximately 850 engineering and technical staff invited to participate, of whom 101 responded to the survey. Respondents were 25% female and 75% male, with equal representation from all career stages ranging from one to 25+ years' experience.

**Mobility:** One finding was that most respondents – 85% or higher, in fact – had been at their previous job, 2nd previous job, or 3rd previous job for seven years or less. Two-thirds of respondents had been at their current job for seven years or less. Thirteen percent of men and 8% percent of women indicated that they are currently looking for a different employer, while 16% of experienced engineers and 5% of early-career engineers indicated that they are currently looking or a different employer.

There were also interesting differences in groups' plans to either leave or stay in the engineering profession altogether. Four percent of women and 12% of men indicated that they want to leave the profession in the next few years, while 13% of early-career engineers and 8% of experienced engineers indicated that they want to leave the profession in the next few years.

**Absences from the profession:** Approximately 25% of survey

respondents had already left the engineering profession for a period of time, and then returned. Half of these temporary absences had been for one year or less, while 80% were for less than two years. Perhaps challenging common assumptions, only 43% of temporary absences from the profession were due to maternity and/or parental leaves, while 57% of temporary absences from the profession were for personal factors (health, other interests) or workplace environments (nature of the work, corporate culture, career progression, etc.). Women's temporary absences from the profession were overwhelmingly due to maternity and/or parental leaves, while men's temporary absences from the profession were overwhelmingly reported as being for personal reasons or workplace environments.

**Career satisfaction & decision factors:** So, what factors may be driving decisions to stay with or leave an employer, or to stay in or leave the profession entirely? The survey asked for comments on critical factors that

promote career dissatisfaction and career satisfaction, as drawn from other research on the engineering profession in North America. The survey asked engineering professionals to indicate *how important* a factor was to their career satisfaction and career decisions, and to what extent they *experienced* the factor in their workplace.

Across all groups, a bad boss was considered the most critical negative factor in determining workplace satisfaction and impacting career decisions. The other critical negative factors were an unethical climate, incivility in the workplace that remains unaddressed (bullying, condescension, undermining by colleagues or supervisors), and excessive work demands or requirements without adequate support or resources. Women also named slow or unclear advancement paths or lack of transparency or consistency in advancement practices as a critical negative factor in career satisfaction, while men also named low salary in their respective Top 5 critical negative factors.

When asked about the negative workplace characteristics that they *experience frequently or regularly* in the workplace, the Top 5 responses were excessive work demands or requirements without adequate support or resources, contradictory or conflicting work demands, a money-driven climate, slow or unclear advancement or lack of transparency or consistency in advancement practices, and low salary. It is noteworthy that 'excessive work demands without adequate support' is a key career decision factor for 40% of respondents, and is reportedly experienced regularly by 42% of respondents. Likewise, 'low salary' is a key career decision factor for 44% of respondents, and is reportedly experienced by 27% of respondents.

When asked about factors that would drive them to leave the engineering profession entirely, interesting differences were reported between early-career and more experienced engineering professionals. The former group cited excessive



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work requirements without adequate resources, an unethical climate, and an environment inflexible to new approaches and ideas. The latter group cited a low salary, an unethical climate, and slow or unclear advancement or lack of transparency and consistency in advancement practices as the three most critical factors, respectively.

The Top 3 positive factors that promoted workplace satisfaction were key supportive people in the organization, challenging and interesting work assignments, and a supportive climate to manage multiple life role obligations. These factors were consistent across groups of men and women, as well as early-career and experienced engineering professionals.

In open-ended responses, the themes of strong and ethical local leadership, personal autonomy, and appropriate recognition were the factors that facilitated an individual's career satisfaction. Many respondents reported that "arrogance and hubris among management, lack of transparency and effective communication, lack of mentorship and co-operation from senior employees, and managers that don't get to know their team" would discourage them, while "a positive, friendly, and supportive team environment, good space and equipment to do my work,

working with people you like, finding good mentorship and friendships, and seeing the company involved in the community" lead to personal engagement in the workplace. Pay and benefits that are commensurate with one's responsibility, one's contributions, one's peers, and with corporate profitability was also named a factor that contributes to career satisfaction.

On the other hand, the "pressure to meet unrealistic deadlines without support and without any recognition or compensation, lack of opportunity to influence my own workload, and lack of freedom to control my own work schedule" were reported as significant de-motivators. However, personal autonomy over "projects and time management, having a sense of control over my career direction within the company, flexibility in the work schedule (and seeing supervisors who maintain a work-life balance themselves), opportunities to make key decisions and develop multiple roles within engineering projects, and a clear pathway for advancement" were significant factors that enhance career satisfaction and engagement.

Across several questions in the survey, respondents expressed discouragement with the profession's perceived increased structuring around large engineering corporations "that

seem more preoccupied with quarterly profits than the long-term health and direction of the profession. Local culture is lost, and the local business environment is disregarded by a distant head office. The company sees employees as dollar signs".

The survey findings can help understand the motivators for engagement for engineering professionals overall, but also point out that career stage and gender create different priorities in some instances. The findings repeatedly pointed to the importance of fair and ethical leadership, consistent treatment of employees, and a sense of community in the workplace; no benefit or salary outweighed the negative impact of a 'bad boss' or incivility in the workplace that remained unaddressed. At the core, survey responses reflected a desire for the ability and support to live out the most desirable aspects of engineering identity, which they described as "society's solution-providers: we literally have designed the world we live in, using unique skills and experience to improve people's lives and the human condition".

Readers are welcome to see a longer summary of the findings at [acec-mb.ca/women-in-consulting](http://acec-mb.ca/women-in-consulting).

By M.R. Friesen, P.Eng.  
For the TWICE Committee



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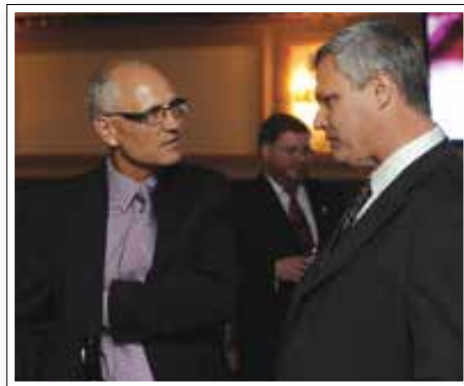





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The Mayo B Project involved the design and construction of a new hydroelectric plant in a remote, sub-arctic climate. Remote operation utilizes reliable, efficient technology, producing renewable energy with lower operating costs. The configuration of the Mayo B Project allowed for the generation of an additional 10 MW of power by doubling the available head at the 1950's era Mayo A facility, and increasing utilization of the existing Mayo River flows. A tunnel was integral to this project, extending 300 m through poor quality bedrock, within challenging artesian conditions, with a difficult tie-in, complicated by proximity to full reservoir head. Tunnel construction proceeded concurrently with bedrock mapping, characterization, design and excavation, necessitating flexibility and timely coordination.

A key technological application was the use of high resolution 3-D LiDAR surveying of the tunnel, and the intake rock face, performed at various project construction stages using a Leica HDS C10 scan station. This equipment generates a point cloud of independent measurements of 10 mm to 15 mm spacing. Due to the tight construction schedule and daily activities, collection of detailed survey data from the excavations necessitated highly efficient and accurate methods. Surveying conditions were complicated by the presence of bolts, mesh, utility pipes/ventilation ducts, and equipment, as well as ponded water. The processed data was invaluable for modelling the excavated rock and finished shotcrete surfaces, to produce accurate quantity measurements, verify design changes



and assess clearances, and to validate hydraulic and energy models with respect to headloss calculations. This data was critical to assess “field-fit” design modifications that arose during the blasting, grouting, and construction of the tunnel (in particular at the tie-in area). The in-situ field data collection during excavations, 3-D surveys, and

associated design refinements occurred concurrently, with no opportunity for error. Expedient processing of the LiDAR data using Leica’s Cyclone software package also allowed project users to view the finalized point cloud models, and extract cross sections/measurements for their own applications and design tasks.

YEC entered a partnership with the First Nation of Na-Cho Nyak Dun (NND), who were financial investors. Yukon Energy was engaged on-going with all stakeholders throughout the permitting, design, construction and commissioning phases. The YEC-KGS-Kiewit team hired local firms and personnel to the maximum extent possible, providing





an immediate economic benefit to the region (\$16 million for the Yukon, and \$2 million in the Mayo area) while minimizing project costs. PKI employed local construction firms and operators for the work, as well as personnel to run their 100-person construction camp. As a legacy, the YEC Alliance team constructed a new community store in Mayo for NND, donated an ultrasound to the local health clinic, and upgraded local baseball fields.

Construction was staged to minimize the impact to the local wildlife, and to accommodate extensive heritage surveys (e.g. penstock re-routed). Local salmon habitat impacts were minimized, with downstream water flow commitments on the Mayo River, and a new salmon spawning channel. The Mayo B hydroelectric project displaces diesel generation, offsetting up to \$10 million dollars in annual fuel costs, and eliminating approximately 25,000 t of greenhouse gas emissions per year.

The Alliance team from YEC, KGS Group, and PKI required integration of resources, expertise and personnel. Cooperation and timely communication were of key importance throughout the tight 20 months of final design and construction especially for the tunnel tie-in to the existing intake. Project management and document control procedures and initiatives were critical to ensuring timely information sharing and proved challenging given the design and construction schedule.

Stabilization of the intake rock slope and construction of the tunnel adjacent to the existing Mayo A intake required detailed understanding of the low strength bedrock, variable bedrock fracture / shear conditions and the high groundwater heads. Careful characterization of the in-situ rock mass was critical for the rock slope stabilization, and in predicting tunnel excavation performance/blast designs, and associated grouting methods/procedures for the tunnel excavation and tie-in. The overall weak bedrock conditions, strong schistosity dipping out of the tunnel face, combined with weathered and open-jointed, reservoir connected discontinuities, indicated that the bedrock was prone to significant



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overbreak, as well as significant seepage during tunnel excavations, necessitating extensive grouting and tunnel design modifications 'on the fly'. The in-situ bedrock conditions identified, approaching and at the existing Mayo A intake, resulted in a relocation of the tunnel tie-in point, requiring contemporaneous 3D modeling of the tunnel and revised design, while excavations continued in the field.

The project alliance team applied value engineering principles throughout the design and construction phases; and combined with good communication, this was key to the successful project completion. Despite the ambitious schedule and the many challenging design aspects, including the key tunnel component, the project was completed ahead of schedule and within budget. The use of the existing Mayo A intake aligns with a key YEC operating principle of optimizing existing assets, while passing on the associated cost savings to the ratepayer, was demonstrated with the challenging tunnel tie-in, completed with full reservoir conditions. The project also supported YEC's guiding principles of sustainability, innovation, in taking a proactive approach in meeting the Yukon's electricity needs. The economic benefits of the new modern, efficient, clean, renewable Mayo B generation facility will be experienced for at least the next 50 years.

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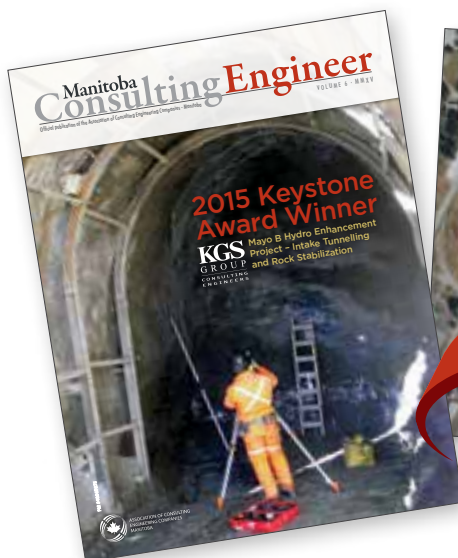
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Category: **Energy Resource Development**  
 Project Name: **Montana Alberta Tie Line Remedial Action Scheme**  
 Firm: **Teshmont Consultants LP**  
 Client: **Enbridge Inc./Montana Alberta Tie Ltd.**

Teshmont was engaged to study and design a Remedial Action Scheme for the Montana Alberta Tie Line, a new transmission path that connects the electrical systems of Alberta and Montana.

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Category: **Infrastructure/Transportation**  
Project Name: **Waverley West Arterial Roads Project – Part III**  
Firm: **Dillon Consulting Limited**  
Client: **City of Winnipeg**

**The Waverley West Arterial Roads Project (WWARP) – Part III** extends Kenaston Boulevard from Bishop Grandin Boulevard to the Perimeter Highway, relieving congestion on adjacent roadways, servicing the new Waverley West neighbourhoods, and creating a new north-south economic route in southwest Winnipeg. Following Dillon Consulting’s multi-discipline design and construction administration of the project, over 40 lane-kilometres of high speed roadway and 5.5 kilometres of active transportation paths were opened to the public in November 2014, including a two lane overpass structure. The WWARP project is poised to provide much needed transportation capacity for the growing southwest part of Winnipeg.



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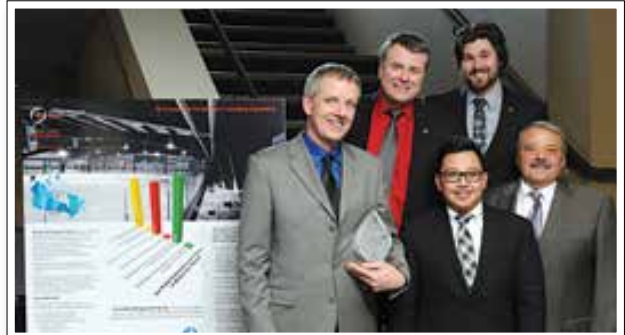
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 Firm: **Accutech Engineering Inc.**  
 Client: **Government of Nunavut**

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Category: **Building Engineering**  
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 Firm: **WSP Canada Inc.**  
 Client: **Public Works and Government Services Canada**

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Category: **Small Projects**  
 Project Name: **Seven Oaks General Hospital Dialysis Unit 3**  
 Firm: **SMS Engineering Ltd.**  
 Client: **Synyshyn Architecture and Interior Design**

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Category: **Infrastructure/Transportation**  
 Project Name: **Challenges and Innovations for Bridge Foundation Repairs**  
 Firm: **Tetra Tech WEI Inc.**  
 Client: **Manitoba Infrastructure and Transportation - Water Management and Structures**

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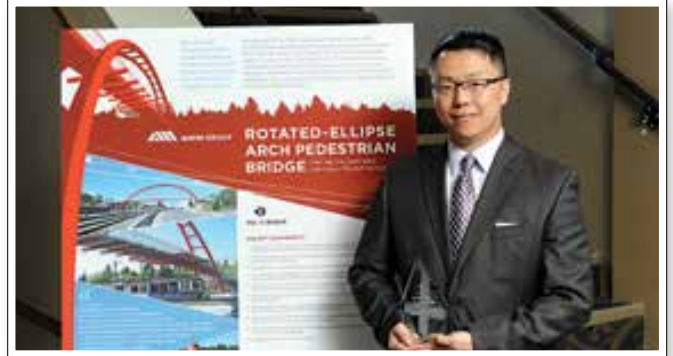


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Category: **Infrastructure/Transportation**  
Project Name: **Rotated-Ellipse Arch Pedestrian Bridge for the Calgary West Light Rail Transit Extension Project**  
Firm: **SMMM Group Limited**  
Client: **SNC-Lavalin**

The new 24th Street pedestrian overpass is part of the estimated \$1.4B Calgary West Light Rail Transit (LRT) expansion project. As member of the SNC-Lavalin joint venture team, MMM Group Limited designed the new pedestrian overpass crossing Bow Trail SW, west of 24th Street SW. The new longer bridge spans six lanes of Bow Trail, and two LRT tracks at mid-span. The bridge utilizes steel-arched pipes as the main structural members, providing a main span length of more than 50 metres. The shape is inspired by the Chinook arch, a regular feature of the City of Calgary's skyline.



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Photo: Gerry Kopelov



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# AWARD OF MERIT

Category: **Environmental**  
 Project Name: **Brandon Third Street Dam Replacement**  
 Firm: **KGS Group**  
 Client: **Client: City of Brandon**

When the Brandon Third Street Dam was irreparably damaged, KGS Group designed emergency measures to limit further habitat damage and preserve Brandon’s water supply. KGS Group then developed a functional, cost effective, permanent solution that also removes a 70-year old barrier to fish passage. The new overflow rockfill weir, with a low flow rock ramp fishway, preserves Brandon’s water supply, restores fish passage, adds spawning habitat, and improves the safety and aesthetics of the river adjacent to Dinsdale Park. KGS Group, the City of Brandon and regulators illustrated that innovative solutions to preserve vital infrastructure can also enhance the environment.



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# AWARD OF MERIT

Category: **Industrial**  
 Project Name: **Boeing Building  
Expansion**  
 Firm: **Stantec Consulting Ltd.**  
 Client: **Boeing Canada Ltd.**

The goal of the expansion was to create an environment that enhances collaboration, improves employee satisfaction and supports unit cost reduction and overall production system efficiencies. Through changes in Boeing Winnipeg's work statement business model, the fabrication plant required to be expanded for new procession types, equipment and space. The project scope includes the design and construction of a new building addition at the west end of the existing fabrication plant with select renovations within the existing factory and office areas.



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# AWARD OF MERIT

Category: **Municipal and Water Technology**  
 Project Name: **Water Treatment Plant Process Wastewater Treatment**  
 Firm: **JR Cousin Consultants Ltd.**  
 Client: **Municipality of Sioux Lookout**

Sioux Lookout's WTP process wastewater, equal to 18.8% of the raw water flow, was stressing its sewer system capacity.

To reduce loading to the sewer system, JRCC designed an ultrafiltration treatment system to treat the process wastewater. As a result, the process wastewater discharge was reclaimed as potable water, reducing the WTP process discharge by 75%. The project was completed under budget, allowing a UV upgrade to be added to service the entire water supply.

With the reduced sewage system loadings and increased water treatment capacity, Sioux Lookout has added years of service life to its sewer and water systems.



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# RISING STAR AWARD

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 30<sup>th</sup> 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, Jason Cousin in 2009, Beth Phillips in 2010, Owen Van Wallegghem in 2011, Jonathan Epp in 2012, Kimberly Yathon in 2013 and Kristen Poff in 2014. This year ACEC-Manitoba congratulates Jomar Manzano, P. Eng. as the 2015 recipient.

## Jomar Manzano, P. Eng.

Jomar joined Tetra Tech in 2010 immediately after graduation from the University of Manitoba with a B. Sc. in Civil Engineering. He is a proven, reliable team member on projects including the Disraeli Bridges, Cameco Key Lake Back-up Power Upgrades, Sand Hills Casino, and the Millennium Stimulation Services Tank Foundation and Access Structure. He received his P. Eng. in March 2015 and is enrolled in the Certificate in Management program at the University of Manitoba.

Jomar shows his dedication to the profession of engineering and to ACEC-MB with the numerous volunteer activities he has participated in and the continued commitment he offers. He has been an active committee member of ACEC-MB Mentorship Program, Business Practices Committee, Awards Committee, Young Professional Committee and since 2012 has chaired the Image Committee. As Chair of the Image Committee he leads the committee in the responsibility of raising the awareness of consulting engineers in Manitoba. Each year as



Chair he has challenged the Image Committee to broaden its horizons of bringing greater light to the engineering industry. Jomar has also taken on roles as a representative of Tetra Tech in the community, including volunteering for the annual Transportation Association of Canada Conference, attending Career Fairs and participating in the ACEC-MB Mentorship program as a Tetra Tech employee mentor.

In addition to his work and volunteer efforts with ACEC-MB, Jomar also volunteers actively in the wider community. Four years ago he established the Downtown Community Residents' Association (DCRA) as the inaugural chair and continues as Chair of the DCRA Board.

He was the catalyst to the formation of a coalition of citywide neighbourhood groups that is being formed with support from the Social Planning Council of Winnipeg and has done several radio interviews with the CBC to bring public light to the DCRA.

Jomar is truly deserving of this award. He is able to perform at a high level in technical, professional, social, and educational areas. Jomar is avid in his causes, refuses to be satisfied with the status quo, and pushes himself to improve in many areas of his life. His passion drives him to work hard to make his company, the engineering industry, his neighbourhood, and the city a better place. He is driven by genuine thoughtfulness, kindness, and caring.



# ENGINEERING ACTION AWARD

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 and Alana Gauthier in 2014. ACEC-Manitoba congratulates Grantley King, P. Eng. as the 2015 recipient.

## Grantley King, P. Eng.

Grantley King is a Senior Project Manager with MMM Group Limited's Bridges and Structures Group within the Transportation Business Unit. He has over 17 years of experience, 12 of which are with MMM in transportation projects including design build projects, design and construction of bridges, and gate chambers both in Canada and internationally. He played key roles in MMM's recent Owner's Engineer services on behalf of the Province of Manitoba for the CentrePort Canada Way Interchanges, and the PTH 59 / 101 and PTH 59 / PR 202 interchanges as the Construction Resident Engineer Team Lead and Assistant Manager respectively. He is currently involved in the Project Management as Owner's Engineer for the Plessis Underpass Project. In addition to being a professional engineer, Grantley is also a project management professional (PMP).

Over the years Grantley has maintained a professional edge by keeping up with his professional development through attendance at external courses, training and seminars and internal training and workshops. In addition to his professional development he has been actively involved in volunteering as a member



of the APEGM Experience Review Committee, attended six Student Networking Sessions hosted by APEGM, acted as Communication Chair of PMI Manitoba Chapter Conference and is also a member of the MMM Group Employee Committee, and MMM Group Project Manager's Group. Grantley has also been Chair of the Experience and Mentor Committee and Bursary Committee for IEEQ Alumni & Friends.

Grantley is a self-motivated, detailed oriented professional with versatile

skill set, exceptional communications skills and extensive experience. He believes it is important to educate the general public about the role of the Engineer and how they can be trusted to solve different types of problems in society using a variety of technological, scientific and management principals. He says "it give me pleasure being an engineer and a sense of self-fulfillment being of service to the public and promoting confidence to those considering a career in engineering."

# LIFETIME ACHIEVEMENT AWARD

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 Washchyshyn in 2009, George Rempel in 2011, Garry Bolton in 2012, Tim Stratton in 2013, William H. (Bill) Brant in 2014 and this year the Association of Consulting Engineers of Manitoba honors Tom Wingrove, P. Eng.

## Tom Wingrove, P. Eng.

Tom Wingrove is a 1973 geological engineering graduate from the University of Manitoba. He started his career with UMA Engineering Ltd. and progressed from Project Engineer to Department Manager to the National Market Sector Leader for Earth and Water. Tom was also the Manitoba Regional Vice President for a number of years. When AECOM collapsed their individual operating companies, Tom was appointed as the Canadian Business Line Leader for Environment. When North American business lines were created, Tom was appointed as the Deputy Director of Operations for North America Environment.

After 39 years of service to UMA Engineering / AECOM, Tom joined Golder in 2012 as a Senior Geological Engineer with a mandate to build a strong local practice for Golder in Winnipeg. In 2014, Tom was made a Principal in recognition of his leadership role in the company. He has become the face of Golder to the Manitoba market but has also been recruited for projects and pursuits beyond Manitoba – in particular in Canada's north where Tom has significant interest and experience.



His senior leadership experience is extensive, but he has also played a prominent role in business development and the management of key client relationships. Tom has a well-balanced technical resume and participates in projects as a Project Manager, Project Principal or Senior Reviewer. His work experience covers much of Canada, including many projects in Canada's north. Tom is a registered engineer in Manitoba, Ontario, Saskatchewan, North West Territories and the Yukon.

Some of the challenging projects Tom has worked on include the rehabilitation of the Shoal Lake Aqueduct as the Project Principal, construction management oversight of the new Winnipeg Water Treatment Plant, a senior role on the Dew Line De-commissioning Project, remediation planning for the former Domtar Wood Treating Facility and groundwater remediation for the Rockwood Propellant Plant. Currently, Tom is Golder's Project Principal on the Giant Mine Remediation Project in Yellowknife.

Tom has not only given his time to this work, he has also made it a priority to give back to his industry and his community. Tom has been active in ACEC-MB for many years and has been a tremendous supporter and ambassador for the consulting engineering industry. He spent six years on the Board of ACEC-MB including one year as President. He then went on to represent ACEC-MB at the

National Board of the Association of Consulting Engineers for four more years. In 2012, Tom was presented with the Engineering Action Award by ACEC-MB for his contributions to the consulting engineering industry and the local community.

Tom has also given back to the University of Manitoba over the years. For many years he volunteered his time to assist the Geological Engineering Department with their annual field school at Star Lake.

Tom has also been a guest lecturer at the University of Manitoba Environmental Law Course for many years. He has lectured the third year law class on the role of the environmental engineer in environmental matters. Tom has also presented at the Isaac Pitblado Lecture Series.

On a more personal side, Tom has given over 30 years of volunteer service to Cystic Fibrosis including President of the local Chapter, a member of the National Board of Directors and a recipient (with wife Linda) of the Breath of Life Award.

Tom has accomplished much in his professional career and personal life. He has been a true professional and ambassador for our industry and a wonderful mentor and friend to many engineers in our association. Tom's 40 plus year career in the consulting engineering industry as a senior leader, project manager, project engineer, teacher and mentor has been exemplary! 🍷



(L to R) Jeff O'Driscoll, Marcia Friesen, Hunter Loewen, Veronica Marriott, Jomar Manzano.

# 640 Event Recap

On the evening of Thursday, March 12, 2015, ACEC held its 2nd annual 640 event at the King's Head Pub celebrating National Engineering Week. Over 50 people gathered over appetizers and beer to listen to five speakers give enthralling presentations on a wide variety of topics.

The 640 event had a very distinctive presentation style, turning the generally dull PowerPoint presentations into something very enjoyable and captivating. Each presenter had 20 slides which cycled at 20 seconds each, but had no control over their slides. This caused our presenters to be on their toes, making

sure their presentation kept up with their slides. Our presenters were up to this difficult challenge and each gave a succinct and informative presentation that kept everyone who attending talking about them well after they had finished.

Our lucky group of presenters all had unique backgrounds in engineering, which led to a diverse set of subjects. Marcia Friesen gave a very compelling presentation on the moral dilemmas engineers face in our evolving world, Jeff O'Driscoll presented on how climate change is affecting the engineering profession, Hunter Loewen gave a presentation on how engineering and

engineers can help achieve the U.N. sustainable development goals, Jomar Manzano presented on "code switching" and how it can affect the working environment, and Veronica Marriott presented a student's viewpoint on applying for your career during your graduation year.

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



# TRIBUTE TO W.L. (LES) WARDROP, D.Sc., B.Sc.(E.E.), B.Sc.(C.E.); P.ENG.

Leslie (Les) Wardrop was born in Whitemouth, Manitoba on December 18, 1915. Les received his bachelor's degrees – both from the University of Manitoba – in Electrical Engineering in 1939 and in Civil Engineering in 1947 following his return from serving with the Army Signals overseas during the Second World War. Les married Olive McLean on November 29, 1941 in Kingston, Ontario, and they raised three children together.

In 1947, Les started his career as a Waterworks engineer with the City of Winnipeg Sewage and Waterworks department. His early career with the City of Winnipeg motivated him to enter the field of consulting engineering. At that time, there were no engineering firms in the city. Convinced there was an opportunity for additional engineering consulting services, Les founded W.L. Wardrop & Associates in 1955 – one of the first Winnipeg-based engineering consultants – which later became Wardrop Engineering Inc., and currently operating as Tetra Tech WEI Inc. Les' initial goals of expansion, diversification, technological leadership, and quality service continue to be the basis for Tetra Tech's Manitoba operation. With his staff of four, initially, W.L. Wardrop & Associates offered services in public works engineering and housing subdivision servicing. Not long after establishing W.L. Wardrop, Les' firm would gain national and international reputation expanding its services to include pulp and paper, solar energy, and nuclear engineering. The Firm launched water projects in West Africa through its International Division which encompassed the globe operating as Wardrop Engineering Inc. In 1980, Les Wardrop retired from active participation in the Company, but continued to serve on its Board of Directors for years after.

Throughout the years, Les played a significant role in Canadian engineering activities and participated in numerous community undertakings. Les is a past president of the Association of Professional Engineers of Manitoba (1959-1961), the Canadian Council of Professional Engineers (1961-1962); the Canadian Institute of Pollution Control (1960); and the Winnipeg Chamber of

Commerce (1970). He is also a past chairman of the Industrial Development Board of Greater Winnipeg (1969); the Salvation Army Advisory Board (1978; campaign chairman for two years); and was a director of the Royal Canadian Mint and the Biomass Energy Institute. Les was member of the board of Misericordia Hospital (1977-1983), member and chairman of the Manitoba Enterprise Development Board (1980-1985); and campaign chairman of the New Activity Centre, Middlechurch Home of Winnipeg (1980). Les served as principal organizer for the University of Manitoba homecoming events for his two graduation classes and was one of the first volunteers in 1998 to join the unofficial campaign for the new Engineering and Information Technology Centre. Les became an Honorary member of the official campaign committee in 2002 – actively serving in a spirit truly representative of engineering in the province of Manitoba.

In 1977, Les received Meritorious Service Award from the Association of Professional Engineers of Manitoba for his extraordinary engineering achievements and community involvement. In 1990, the University of Manitoba's Faculty of Engineering dedicated the "Les Wardrop Reading Room" at its library in his honour. And in 2002, the Consulting Engineers of Manitoba paid tribute to Les by naming him the first honorary presenter of its prestigious Keystone Award for consulting engineering excellence; and awarding him the Lifetime Achievement Award 2002 in recognition of his leadership, achievements and contribution to consulting engineering and the community. In 2006, the University of Manitoba presented Les with an honorary Doctorate of Science at their spring convocation.

Today, Wardrop Engineering is known as Tetra Tech WEI Inc. Wardrop Engineering joined Tetra Tech in 2009 and Tetra Tech was recently ranked #1 by Engineering News-Record (ENR) in Water for the 12th Year in a Row; #4 in Sewer and Waste; and as the #7 in Top 500 Design Firms in 2014. Presently, Tetra Tech has a geographic reach of more than 300 offices and 13,000 employees worldwide. 🌐

# 2014-2015 YPC Events Summary

## 2014 ACEC YOUNG PROFESSIONAL GALA

The 6th Annual Young Professionals Gala took place on October 15, 2014 at the Qualico Family Centre in Assiniboine Park. This year's Gala was a great success, with more than 100 tickets sold! The event began in the early evening, with refreshments, appetizers, and conversation.

Following the cocktail hour, dinner was held. Lively discussion took place, as members from many backgrounds, companies, backgrounds, and levels of experience shared a delicious meal. As dessert was finished, the YP Chair, Lin Watt, took the podium to introduce APEGM President Marcia Friesen, current ACEC Manitoba President Cameron Dyck, and the Keynote speaker, Jodi Moskal.

Jodi Moskal is the Chair of the Winnipeg Chamber of Commerce and co-owner of Moskal Electric Ltd., founded in 1998 to provide electrical and network cabling solutions for government, commercial, and industrial clients in Manitoba. As a leading entrepreneur, Jodi has had the opportunity to navigate the complex and exciting world of engineering, construction, and the trades. Jodi is invested in the future of the City of Winnipeg, and through the Winnipeg Chamber of Commerce's BOLD campaign, she is an advocate for the future prosperity of Winnipeg.

Jodi gave an inspiring presentation on her view of networking, and described how it has positively affected her career and business. She shared personal accounts, and made clear the benefits of networking, and how it is a necessity in today's workplace. Jodi's passion for helping Young Professionals, and the City of Winnipeg, was clear.

## 2014-2015 ACEC-MB MENTORSHIP PROGRAM

The YPC introduced the ACEC-MB Mentorship Program in 2013-2014 and returned again with more participants



in 2014-2015. 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 ACEC-MB Mentoring 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 mentorship program participants.

The second event was a panel discussion featuring Richard Tebinka, P.Eng (MMM) James Blatz, P.Eng, Ph.D (TREK), Robyn Koropatnick, P.Eng (Teshmont), John Woods, P.Eng (MECO, formerly of

KGS Group) and Beth Phillips, P.Eng (WSP Group) as panelists. The topic was "Managing the succession of Senior Engineers from the Consulting Engineering Sector", and engaged the senior engineers to explore possible solutions and what impacts succession will have on new and aspiring consulting engineers.

The final event mingled all student and mentor participants in a final networking event. The 2014-2015 program coordinators, Michael MacKay (KGS Group), Kristen Poff, P.Eng (WSP Group) and Vanessa Krahn (AMEC Foster Wheeler) all thank the Faculty of Engineering, UMES, and all participants from the 2014-2015 ACEC-MB mentorship program and encourage mentors to consider volunteering in 2015.

**INAUGURAL ACEC  
YP CURLING BONSPIEL**

On March 16, Young Professionals gathered for the inaugural YPC Curling Bonspiel. Eight teams vied for the prestige and glory of hoisting the coveted trophy. The bonspiel was set up in a Bingo Curling format where the rules for scoring each end were not revealed until all rocks had been thrown.

Eight firms: AECOM, Dillon, Hatch, KGS, MCW/AGE, MMM, Tetra Tech, and WSP were represented by the 32 participants, but ultimately only one team could come out on top. The winners of this year's YPC Curling Bonspiel were:

- Kim Yathon, Amanda LaCoste, Jordan Thompson, and Adam Braun.

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

- Kristen Poff Beth Phillips, Lesia Drul, Ashley Morrissey, and Dana Bredin.

In addition, Matthew Jones was the winner of the Closest to the Button competition. We look forward to seeing many returning competitors at the 2016 Bonspiel!

**PATTERSON GLOBALFOODS TOUR**

On April 29, the YPC held a tour of the Paterson GlobalFoods Institute. The building was recently renovated to serve as part of the downtown campus of Red River College. Originally, the building served as the Union Bank and was opened in 1904. As one of the first modern day skyscrapers in North America, the building stands at 10 storeys tall. Led by Facilities Manager, Murray Heibert, twelve young Professionals attended the tour. The tour visited the culinary arts classrooms, the student run restaurant (Jane's), the student run cafeteria and the student residence. Overall, the building displayed many feats of Structural, Mechanical and Electrical Engineering.

It is likely that a few from the tour will be looking to make a reservation for dinner at Jane's, plan an event on the roof top patio with beautiful city views, or just maybe register for the mixology class offered by the college. After everyone's mouth was watering from seeing all of the delicious food being prepared, the

attendants of the tour went to the King's Head Pub for some socializing, refreshments and appetizers. Thanks to Murray Heibert for volunteering his time to show us this marvellously renovated building.

**2015 ANNUAL YP  
MIXER: GOLDEYES GAME**

On June 29, 2015 the ACEC YP events committee hosted a sold-out mixer on the patio deck at Shaw Park. Fifty young professionals from consulting, client groups, construction, manufacturing, and beyond gathered to watch the Winnipeg Goldeyes battle the Sioux City Explorers. Although the Goldeyes lost, the attendees still had a great time enjoying lively conversation, a few drinks, and the opportunity to grow their professional networks. Attendees also took advantage of the unlimited food and free drink ticket that was included as part of the event. Thanks to Mike Loeppky of Castle Mortgage Group for providing sponsorship. 🍷

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# 17th Annual ACEC-Manitoba Golf Tournament

The Association of Consulting Engineering Companies – Manitoba held their 17th annual golf tournament on Wednesday May 13, 2015 at the Pine Ridge Golf and Country Club. This year's tournament had an attendance of 120 registered golfers. While it was a cooler day, a great time was had by all. Once everyone was inside the clubhouse, a fabulous prime rib dinner was served, including a variety of desserts. The awarding of prizes to all who attended, completed the evening festivities.

We congratulate the first place team from Teshmont Consultants LP: Jade Ewasiuk, Mark Mihalchuk, Brian Frost and Harkaran Jhinger.

Second Place winners were the team from Hatch Ltd: David Fuchs, Jarrod Malenchak (Manitoba Hydro) and Jim Kilgour.

Third Place winners were the team from Dillon Consulting: David Krahn, Lester Deane (City of Winnipeg) Taran Peters and Bruce McPhail.

The Association of Consulting Engineering Companies – Manitoba would like to thank the players, prize, hole and event sponsors for making this event successful. ACEC-MB is proud to donate \$1500 to Siloam Mission from this year's tournament proceeds. Shirley Tillett, Executive Director and Jim Kilgour, Golf Co-Chair presented the cheque to Judy Richichi, Director of Major Gifts and Corporate Relations.

Keep your calendars open for the 18th annual tournament next May at the Pine Ridge Golf and Country Club. 🏌️



Keep your calendars open for the 18th annual tournament next May at the Pine Ridge Golf and Country Club.



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### History

SMS began on January 1, 1965 as a partnership of professional mechanical engineers Ray Scouten, Bill Mitchell and Dennis Sigurdson, operating under the name Scouten Mitchell Sigurdson & Associates Limited. Experienced in the Toronto and Winnipeg markets at numerous firms, the founders felt they could offer a difference to clients: a firm committed to the utmost in quality, service and a desire to build long-lasting relationships with a commitment to see the job done right.

In 2000, to better reflect a second generation of ownership, they rebranded to become SMS Engineering Limited.

As SMS grew through acquisitions and undertook larger projects, they gained the capacity to service more complex projects, while maintaining



Winnipeg James A. Richardson Air Terminal Building – named 2013 ACEC Keystone Award Winner



Polo Park Shopping Centre

“We treat buildings we work on like our own, as we personally use many of them such as hospitals, schools, universities and shopping malls.”

the ability to provide quality for small jobs, and to be there whenever or wherever their services were needed.

Today, 50 years after the company’s founding, it continues its commitment to quality and service, demanding excellence and persevering through every project’s proper completion.

According to Chris Hewitt, Principal, “*We treat buildings we work on like our own, as we personally use many of them such as hospitals, schools, universities and shopping malls. The airport is one project where we have been ‘in for the long haul,’ having designed a major expansion in 1986, completed*

*numerous renovation projects, and designed its replacement.*

*“We have been around longer than some of the more mature buildings in Winnipeg, many of which we have had the privilege of not only designing originally, but renovating over recent years.”*

### Local firm, national outlook

SMS strives for a national outlook from its Winnipeg location and is actively involved in projects across Canada.

The company’s third-generation ownership group is comprised of engineers employed in the firm and

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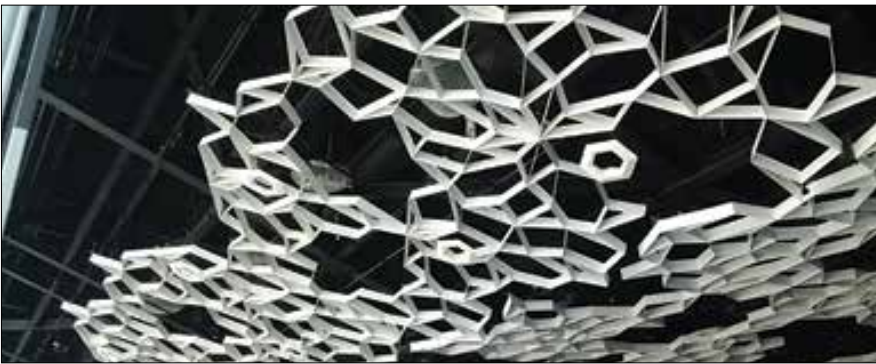
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Rendering of the City Room of the RBC Convention Centre



Installation of the crystal-like effect lighting in the City Room - August 2015



Photo of SMS Staff at 45 years

“This consistency in staff retention results in being able to offer a breadth and depth of knowledge and experience in all aspects of mechanical and electrical building systems.”

active in day-to-day activities. Its staff is made up of 70 individuals, with an average service of 10 years with the company.

This consistency in staff retention results in being able to offer a breadth and depth of knowledge and experience in all aspects of mechanical and electrical building systems. Their design efforts are complemented by seven full-time contract administrators to assist in the final stages of its projects.

### Long-Term Relationships

Priding itself on developing and maintaining long-term relationships with their clients, SMS has been working on what is known today as the Health Sciences Centre Campus for five decades.



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*Midwest Engineering Ltd. congratulates SMS Engineering Ltd. on their anniversary of 50 years of exceptional service.*

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Staff photo - 50 Years



Interior shot of Polo Park Shopping Centre

In fact, their first project was at the Children's Hospital. It is somewhat fitting that today one of the firm's largest projects is the new Womens Hospital on the same campus.

### The Right People

SMS Engineering is always looking to enhance their corporate strength and services by growing from within. Their goal is to bring in people who share their enthusiasm for the industry and commitment to service - providing them with the opportunity to grow.

*Says Chris Hewitt, "It is an exciting place for those young people to cut their teeth. Of course, not every project features a water tunnel where you can experience a bear swimming over your head, such as the Journey to Churchill exhibit at the Assiniboine Park Zoo, but we have been part of some unique projects in the past decade including Investors Group Field, University of Winnipeg Richardson College for the Environment and now the redevelopment of RBC Convention Centre."*

"From summer interns to engineers-in-training, we support young professionals and give them an opportunity to grow. The consulting industry is fast-paced, and there is a lot of learning on the job."

**It has been Eastside's pleasure to work alongside SMS**

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Partners (L to R) Scott Hammond, Wayne Armstrong, Allan Baskin, Jeff Horrocks, Chris Ott, Gordon Whiffen, Stirling Walkes, Peter Gyc, Chris Hewitt and Helmut Waedt



Health Sciences Centre - Womens Hospital



Health Sciences Centre



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congratulations



Congratulations to SMS Engineering on their 50<sup>th</sup> anniversary in business.

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“Continuous learning and collaborating help to keep the company sharp and able to keep up with how the design world is becoming more complex and technical.”

From summer interns to engineers-in-training, they support young professionals and give them an opportunity to grow. The consulting industry is fast-paced, and there is a lot of learning on the job.

**Status Quo Not Permitted**

Every project has its own character and needs to have unique solutions applied to its challenges.

As the design world becomes more complex and technical, staff adds to its skill set through continuing education and professional development.

Many staff sit on technical code and standards committees for the *National Energy Code* and other professional groups such as Engineers Geoscientists Manitoba, ASHRAE, BOMA and ACEC, where they are actively involved on the Institutional, Young Professionals and Private Sector committees. This enables SMS to be at the leading edge of code and standards development, positively influencing how the field develops for the benefit of the public.

**Professional and Personable**

While stressing the importance of being professional, SMS prides itself on hiring individuals who share the goals of the company. This industry can be incredibly stressful with deadlines and budgets. The staff works hard and the company enjoys treating them whenever it can.



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Andy Malyk  
Territory Manager, Lennox Industries

Andy.malyk@lennoxind.com  
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**Bockstael Construction Limited is proud to have partnered with SMS Engineering Limited on many projects over the last half century.**

**Congratulations to SMS Engineering on 50 years in business!**




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Informal pizza gatherings to golf tournaments and holiday celebrations are enjoyed by the tight-knit group. This past June, everyone got into the spirit of a proper “English garden party” at the Assiniboine Park.

While mingling and posing for pictures with their garden hats - stories were shared of the past 50 years. Retirees were thrilled to see that SMS continues to provide quality design and customer service.

*“It was great to spend time with the folks who started it all”, says Helmut Waedt, Principal, “and to have them experience the pride and enthusiasm of today’s crew as they continue the SMS legacy of excellent industry service.”*



Congratulations to SMS Engineering on 50 Years of Success!

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# Congratulations CTTAM



This year the Certified Technicians and Technologists Association of Manitoba (CTTAM) will be celebrating a significant milestone of 50 years! For the past 50 years, CTTAM's members have played a vital role within engineering and applied science industries in Manitoba.

Founded in October of 1965 as MANSCETT (Manitoba Society of Certified Engineering Technicians and Technologist) W.A. Habington, the Associations' first elected president, represented a membership of 39. Today, CTTAM membership has grown to over 3200 members. Impressive!

The office has expanded from one employee in 1975 to four in 2015. While CTTAM is managed by the Executive Director it also includes a Registrar, two administrative staff and a large volunteer base. It is critical to acknowledge that CTTAM would not be able to function without the volunteers who form the various committees beginning with the leadership and vision of the Board of Directors as well as the eight standing committees.

We are excited to announce CTTAM's 50th Annual General Meeting (AGM) and

Anniversary Events scheduled for November 6 and 7, 2015. We will be celebrating this milestone in the company of old and new acquaintances, exploring our past, present and future as we listen to the wisdom of our great keynote speakers.

Friday's event, hosted by the Young Leaders Committee, will be located at the Assiniboine Park Zoo, Journey to Churchill facility. It will mark the launch of CTTAM's new Mentorship Program which will focus on guiding CTTAM's newest members to success, mentored by those experiencing it firsthand. The Mentorship Keynote Speaker, Priti Shah B.A., LL.B., C. Med., will be discussing the importance of mentors and how it has impacted her professional and personal journey.

Saturday's events include the 50th AGM and culminate with the 50th Anniversary Gala Dinner, both located at the Royal Aviation Museum of Western Canada. We will have the opportunity to celebrate newly certified members as well as acknowledge the accomplishments of our membership from a cross-section of areas and experience. We are really

excited to announce the Gala Keynote Speaker, Michelle Dagnino, Generational Change Expert, an international speaker who specializes in multi-generations in the workforce.

This is going to be a great event and what better opportunity to acknowledge the contributions of your fellow technicians and technologists! CTTAM needs your assistance in making that happen. In the next three months CTTAM will be sending emails to the membership requesting members, employers, and co-workers to nominate outstanding individuals within engineering and applied science industries in Manitoba.

CTTAM is committed to celebrating technicians and technologists who have made an impact and the 50th Anniversary is a perfect venue to do so. It is our hope that you will join us in celebrating CTTAM's Past, Present and Future... the Next 50 Years!

For more information on events, young leader's mentorship opportunities, registration and sponsorship please visit [www.cttam50th.com](http://www.cttam50th.com).



CTTAM is committed to celebrating technicians and technologists who have made an impact and the 50th Anniversary is a perfect venue to do so.

Congratulations to CTTAM on 50 great years representing Manitoba's Certified Technicians and Technologists.

Here's to the next 50!



Proud Publishers of CTTAM's Manitoba Technologist Magazine



# Congratulations HATCH HATCH

Hatch is an employee-owned, multi-disciplinary professional services firm that delivers a comprehensive array of technical and strategic services, including consulting, information technology, engineering, process development, and project and construction management to the Mining, Metallurgical, Energy, and Infrastructure sectors. Hatch has served clients for over six decades with corporate roots extending over 100 years and has project experience in more than 150 countries around the world. With over 10,000 people in over 65 offices, the firm has more than \$35 billion in projects currently under management.

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**Our concern for the environment is more than just talk**

As we continue to deliver valuable information through the pages of this magazine, in a printed format that is appealing, reader-friendly and not lost in the proliferation of electronic messages that are bombarding our senses, we are also well aware of the need to be respectful of our environment. That is why we are committed to publishing the magazine in the most environmentally-friendly process possible. Here is what we mean:

- We use lighter publication stock that consists of recycled paper. This paper has been certified to meet the environmental and social standards of the Forest Stewardship Council® (FSC®) and comes from responsibly managed forests, and verified recycled sources making this a RENEWABLE and SUSTAINABLE resource.
- Our computer-to-plate technology reduces the amount of chemistry required to create plates for the printing process. The resulting chemistry is neutralized to the extent that it can be safely discharged to the drain.
- 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.
- In order to reduce our carbon footprint on the planet, we utilize a carbon offset program in conjunction with any air travel we undertake related to our publishing responsibilities for the magazine.

***So enjoy this magazine...and KEEP THINKING GREEN.***

To reach the engineering profession through *Manitoba Consulting Engineer* magazine and its targeted readership, contact Jeff at your earliest convenience to discuss your company's promotional plans for 2016.

**Jeff Kutny**, Marketing Manager

Phone: 1-866-985-9789  
 Fax: 1-866-985-9799  
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ASSOCIATION OF CONSULTING  
ENGINEERING COMPANIES  
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# Member Services Guide

# 2015

# Member Services Guide



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### **Aerospace**

Boge & Boge Ltd.  
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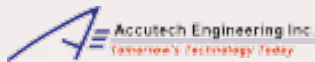
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Contact: Brent Wall  
Website: www.accutecheng.ca



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Contact: Jeff O'Driscoll, P.Eng.  
Website: www.ae.ca



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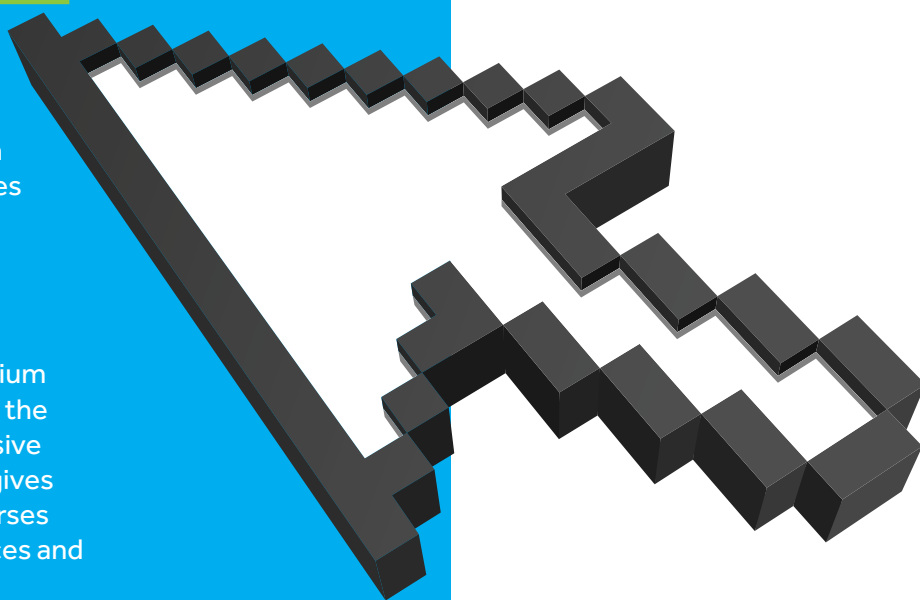
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