THE KEYSTONE PROFESSIONAL

SPRING 2023

THE OFFICIAL PUBLICATION OF **ENGINEERS GEOSCIENTISTS MANITOBA**

INSIDE

THIS ISSUE

Return undeliverable address to: Engineers Geoscientists Manitoba, 870 Pembina Highway, Winnipeg MB R3M 2M7

www.EngGeoMB.ca

ENGINEERS GEOSCIENTISTS MANITOBA

SPRING 2023
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The Keystone Professional Committee would like to hear from you. Please e-mail your comments to: **Info@EngGeoMB.ca**. Practitioners are also encouraged to submit articles and photos on topics that would be of interest to the membership.

Engineers Geoscientists Manitoba recognizes that Winnipeg is on Treaty 1 territory, the territory of the Anishinaabeg, the Nehiyaw, the Oji-Cree, the Dakota, and the Dene Peoples and on the homeland of the Métis Nation.

AVAILABLE IN ALTERNATE FORMATS UPON REQUEST

ENGINEERS GEOSCIENTISTS MANITOBA

THE KEYSTONE PROFESSIONAL

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ENGINEERS GEOSCIENTISTS MANITOBA

SPRING 2023

FEATURES

DEPARTMENTS AND COLUMNS

SEND CHANGE OF ADDRESS TO:
The Keystone Professional,
Engineers Geoscientists Manitoba,
870 Pembina Highway, Winnipeg, MB, R3M 2M7
Info@EngGeoMB.ca | www.EngGeoMB.ca

PRESIDENT'S MESSAGE

IAN SMALLWOOD, P.ENG.

WHO DO YOU WORK FOR?

Occasionally we are asked, especially when first introduced to someone new, "What do you do?", or "Where do you work?". These are both simple questions for us to answer. However, if we are asked a question worded slightly differently, like, "Who do you work for?", it can become complicated if we choose to answer literally. This is due to every practitioner's ethical duty to protect the public and environment above all other obligations, such as working for an employer's or client's best interests.

According to our legislative Act, the practice of professional engineering means any act of planning, designing, composing, measuring, evaluating, inspecting, advising, reporting, directing or supervising, or managing any of the foregoing that requires the application of engineering principles and that concerns the safeguarding of life, health, property, economic interests, the public interest, or the environment. Similarly, the practice of professional geoscience means any act of documenting, analysing, evaluating, interpreting, or reporting on the earth's materials or on resources, forms, or processes, or managing any of the foregoing that requires the application of the principles of geology, geophysics, or geochemistry and that concerns the safeguarding of life, health, property, economic interests, the public interest, or the environment.

I'm going to pause here to check if anyone is actually reading this article by stating definitively the chicken came before the egg. If you agree or disagree, please let me know by email. Now, when reading the definitions found in the Act in isolation, both could be construed to allow practitioners to decide which particular part of the practice is more important than the others if there is a conflict (i.e., the economic interests of a client could be considered more important than the public or the environment). It's for this reason our Code of Ethics steps in to add clarity for the practitioner.

Our Code of Ethics is binding on practitioners. The very first tenet states that practitioners shall:

> *1. Hold paramount the safety, health, and welfare of the public and the protection of the environment and promote health and safety within the workplace.*

This is the clarity needed for practitioners who may be asked, sometimes strongly, to implement the directions/requirements received from their employer or client, while recognizing a resultant negative impact of implementing such directions/requirements on the public or the environment.

Now one might suggest that having to decide doesn't happen very often at all in this day and age of established codes, standards, and inspections. While it's true we live in an era where protection of the public and environment are continually being emphasised and legally enforced, practitioners still need to be diligent in recognizing subtler effects and do the right thing. I'll give a recent, actual example from a Manitoba engineer.

A multi-storey commercial building was being renovated. On one floor, the ceiling space was very congested and some new plumbing piping needed to be run amongst the existing structural beams, ductwork, and electrical. In one particular location, the space was so tight that the contractors were faced with either an expensive re-routing of the plumbing or running the piping perpendicular through a supply air duct that provided air to the office space.

The engineer considered the various temperatures and humidities involved and determined there was a real possibility of condensation forming inside the supply air duct that could allow mold/mildew to form. There was no opportunity to mitigate this using insulation due to the space and restriction to the airflow it would cause. Ultimately, the engineer felt the risk to the health of the building occupants working downstream of this supply air duct outweighed the cost savings to the contractor and client. The issue was debated among peers and there was an agreement before the decision was made. In this example, I would suggest the engineer considered and rightfully put the health of one or more unsuspecting office workers above the economic interests of a client.

In today's economy, with thinner margins due to competition and broken supply chains leading to long lead times, employers and clients are often applying pressure on practitioners to help meet budgets and schedules.

In the midst of this pressure, let's remind ourselves and each other who we work for.

Feel free to contact the President or Council directly by email: **President@EngGeoMB.ca**

CEO'S MESSAGE

M. GREGOIRE, P.ENG., FEC

A CHANGE TO THE RATE OF CHANGE

It is said that the only constant is change. It's quite possible that this is true, but what we tend to notice is when the rate of change accelerates significantly. For the Association, the coming year will be one of those periods.

Grant Koropatnick's departure as the CEO and Registrar is a significant one. Having been at the helm for 17 years, he oversaw much growth for Engineers Geoscientists Manitoba. That growth included the implementation of a continuing professional development reporting program, improved government relations (leading to two Act changes), and a program focused on moving towards a membership that better reflects society. For all of us who knew him as the face of the Association for so long, looking to a new leader will take some getting used to.

Concurrent with this change, Engineers Geoscientists Manitoba's Council is performing a governance review. Consultations with an expert have occurred on this front and, based on the recommendations that have been put forward, Council is looking at a multitude of changes that will improve the way that the Association is governed. These changes range from methods of reporting and evaluating Engineers Geoscientists Manitoba's performance, to long-term changes that will require changes to the Act.

Unrelated to the changes noted above, our communications team is undertaking a review of the best way to communicate with stakeholders; particularly with practitioners registered or licensed with Engineers Geoscientists Manitoba. To that end, this edition of the Keystone Professional will look different than readers are used to seeing.

As a long-time writer for this periodical, one of the elements that we have struggled with is the timeliness of information provided through a publication that is printed on paper and delivered through traditional channels. As a prime example, it is unknown at the time of authoring this article whether or not I will still be acting in the role of CEO and Registrar by the time this is distributed. We are, therefore, trying to determine the best ways to communicate information in a timely manner.

Through these changes, it is my role as Acting CEO and Registrar to ensure that the Association continues its trajectory with as little disturbance to stakeholders as possible. Core operations will be fulfilled as required by legislation in a manner generally consistent with what we are all used to. As for any upcoming changes, it will be our role as the staff and management of Engineers Geoscientists Manitoba to ensure that we move forward with careful consultation, engagement, and deliberation prior to implementation.

As always, I appreciate comments and discussion about standards issues. If you'd like to talk about the above topic or any other area of concern, please do not hesitate to contact me at:

MGregoire@EngGeoMB.ca

KEYSTONE PROFESSIONAL NOTICE

As indicated in the CEO Message, the Association is putting the publication of *The Keystone Professional* on pause while they seek stakeholder engagement on the subject of communication methods to better support our practitioners.

Please watch your email for a survey that will be sent from the Association regarding this particular topic and seeking your feedback.

If you have any questions or comments on this topic, please contact Cella Lao Rousseau, Communications Coordinator, at **CRousseau@EngGeoMB.ca**.

Thank you.

UNDERTAKING NOTICE

Under Part 12 of *The Engineering and Geoscientific Professions Act*

This is notice that on December 21, 2022, Romegio (Romy) Sancio signed an undertaking and acknowledgement regarding fraudulently sealed projects.

Specifically, Mr. Sancio forged the seal of an Engineers Geoscientists Manitoba P.Eng. member without their knowledge or consent. The undertaking acknowledged that:

- Mr. Sancio knowingly forged an engineer's seal on as many as twenty-six (26) projects to the City of Winnipeg's Planning, Property & Development department; and,
- The forgeries created a significant risk to the public as they had not been reviewed or approved by a professional engineer holding a valid certificate of registration;

Engineers Geoscientists Manitoba retains the right to take whatever action it deems necessary in response to the forgeries.

Michael Gregoire, P.Eng., FEC
Acting CEO & Registrar

CORRECTION:
This was not an order of the Discipline Committee as was indicated in the printed version of *The Keystone Professional*. Our apologies for the error.

NOTICE

Under *The Engineering and Geoscientific Professions Act* and the Association's Discipline By-law

ORDER OF THE DISCIPLINE COMMITTEE

This is Notice that on December 23, 2022 Jessica A. Manness, P.Eng. was issued a reprimand following a conviction on a charge of professional misconduct, in accordance with Section 46(1)(a)(c)(d) and (e) of *The Engineering and Geoscientific Professions Act* and Canon 2 of the Code of Ethics.

The conviction arises from the Ms Manness's involvement in providing engineering services in support of a building permit for the excavation of a condominium development in Winnipeg, Manitoba.

In addition to the reprimand:

- Ms Manness is restricted from practising structural engineering until such time as she satisfies the Investigation Committee of her competency in the practice of structural engineering,
- Ms Manness is restricted from practicing geotechnical engineering until such time as she satisfies the Investigation Committee of her competency in the practice of geotechnical engineering,
- Ms Manness was required to pay costs in the amount of $5,000.00,
- The matter will be published in accordance with Engineers Geoscientists Manitoba's policy on publication.

Michael Gregoire, P.Eng., FEC
Acting CEO & Registrar

Full text of the Order of the Discipline Committee and the Reasons for Decision can be found on the Engineers Geoscientists Manitoba website.

MCRT 2.0 SURVEY AND TRAINING

INCORPORATING CLIMATE CHANGE RESILIENCY INTO THE PRACTICE OF INFRASTRUCTURE PROFESSIONALS AND DECISION-MAKERS

Impacts from climate change are happening now and are becoming more frequent and severe with each passing year. Climate change is expected to bring more extreme weather events, such as heavy rainfall and snowfall, flooding, heat waves, droughts, and storms.

At the same time, governments are creating regulations to limit the drivers of climate change and encourage movement away from fossil fuels. These are all implications for professional practice.

Canada is warming at twice the global average rate, highlighting the need for the engineering and geoscience professions to better consider the resulting physical hazards. The failure to consider climate change in the planning, delivery, and completion of projects may incur additional professional liability, and although the current legal obligations are not clear, the Association and its practitioners should be prepared accordingly.

Infrastructure designers and owners are increasingly encouraged to minimize the environmental impact of any designs and to reduce their carbon footprint and resource consumption. More energy-efficient and sustainable buildings and systems help mitigate climate change. Engineers Geoscientists Manitoba recognizes the critical importance of continued professional development and training for practitioners as they adjust to these changes and has successfully sought funding support from the federal and provincial governments, most recently from the Manitoba Government's Conservation and Climate Fund in 2022-2023.

The 2022-2023 funding is for infrastructure-related climate change mitigation training and training resource development, specifically for the project known as Manitoba Climate Resiliency Training (MCRT) Infrastructure 2.0. This funding builds on the three courses that Engineers Geoscientists Manitoba delivered on climate change adaptation as part of the federal/provincial Building Regional Adaptation Capacity and Expertise (BRACE)/MCRT 1.0 program in 2020–2022.

SURVEY CONDUCTED WILL LEAD TO NEW COURSE DEVELOPMENT

In December 2022 and January 2023, Engineers Geoscientists Manitoba contracted Probe Research to survey the training needs of infrastructure professionals and decision-makers in climate change mitigation and resiliency. Ten other Manitoba professional and business organizations agreed to distribute the survey to their members.

These organizations include the following:

- Manitoba Association of Architects
- Manitoba Professional Planners Institute
- Canadian Public Works Association
- Certified Technicians & Technologists Association of Manitoba, and
- Association of Manitoba Municipalities

The reason for broadening the survey input beyond the Association's engineer and geoscientist practitioners was the recognition that our professions need to have a mutual understanding of climate change principles, data, tools, government requirements, and technical solutions that is in common with the understanding of our allied professions and decision-makers.

This will allow all who build and manage infrastructure, including those who work in professional planning, architecture, agriculture, construction, Indigenous organizations, and municipalities, to best work together to meet client needs and ensure public safety. Input from all is also needed to make the best use of limited financial resources by cooperating on providing and cross-marketing training courses to all who would benefit from it, regardless of the provider.

About 85 per cent of survey respondents said it was somewhat urgent to very urgent that climate change action be taken. A key survey finding showed that professionals working in the infrastructure sector find it difficult to prepare for climate change in their work. The top barrier for more than 50 per cent was

the cost associated with implementation. Others find it difficult to persuade clients to incorporate climate change considerations into projects, particularly since climate-related best practices are neither mandated nor regulated in many cases.

Survey respondents had a lengthy list of climate change topics they wished to learn about. One-third picked training regarding costs and funding opportunities for climate mitigation as a top need.

One-third identified wanting to learn more about green energy. Other top training needs identified were water management, building retrofits, and how to effectively communicate about climate change.

These training needs will drive course development beyond the March 31, 2023, end date of the MCRT Infrastructure 2.0 project; therefore, the MCRT project team will be seeking more funding from the provincial and federal governments.

Courses are available for free online to all. In February and March 2023, Engineers Geoscientists Manitoba will offer four free online training courses and three "deeper dive" in-person workshops to build capacity in:

- conducting technical climate risk assessments
- utilizing natural infrastructure solutions
- adapting to changes in codes and regulations, and,
- using energy modelling and geothermal engineering solutions

More course details and registration are available through the online Events Calendar.

The online courses will be recorded and made available to all, along with the recordings from 18 courses delivered through MCRT 1.0, at the MCRT Infrastructure website through Climate West.

COMPREHENSIVE LISTING OF CLIMATE CHANGE TRAINING RESOURCES FROM MULTIPLE PROVIDERS

In addition to courses being offered through the Association, Engineers Geoscientists Manitoba has prepared a comprehensive list of new and existing training resources from providers in Canada and internationally that would be of the most benefit for our target group of engineers, geoscientists, and other stakeholders including our allied professions and decision-makers.

This list can be found in the EngGeoMB Events Calendar, using the "Climate Change" filter.

THE INDIGENOUS PROFESSIONALS INITIATIVE COMMITTEE (IPIC)

The Association's governance policies are focussed on 'Ends' or the desired outcomes. One of these adopted in 2017, number five, is that practitioners reflect the diversity of the public—which leads to the imperative increasing of Indigenous membership—together they constitute End 5.1. In pursuing that "End," the Association's Department of Equity and Representation is working to understand, track, and effectively address the reasons for the significant underrepresentation of Indigenous practitioners in the professions.

The Indigenous Professionals Initiative Committee (IPIC) is within that department and is under the direction of the Indigenous Professionals Initiative Coordinator, Nicole Everett.

Nicole is a member of the Berens River First Nation, with roots in the Long Plain First Nation and Swan Lake First Nation, and has been with the Association since July 2019, focussed on achieving the goals of End 5.1; increasing the numbers of Indigenous peoples in engineering and the geosciences, improving the image of the professions within Indigenous communities, and supporting Indigenous youth participation in programs designed to encourage and support them to enter STEM (Science, Technology, Engineering and Mathematics) fields of study.

Since 2019, work for the IPIC has consisted of the following activities:

- Building the membership of the Committee to include members who can provide guidance in the areas of education, student support, and traditional knowledge, along with practising self-identifying Indigenous engineers and geoscientists already working in the industry to guide the direction of End 5.1. This includes additional membership from the Manitoba First Nations Education Resource Centre, the provincial government, and organizations that provide STEM-based teachings for young people, such as the University of Winnipeg's Wii Chiiwaakanak Learning Centre;
- Updating the terms of reference and code of conduct for the Committee to reflect the noted changes in membership;
- Establishing connections with an Elder(s) from the community to sit on, advise, and share knowledge with the committee, and,
- Development and launch of the *Our Future* campaign, a multi-media Indigenous public awareness campaign, created by IndigPro, featuring five Indigenous individuals in various stages of their engineering and geoscience journeys to reflect the diversity of the profession while also attracting Indigenous youth to professions in STEM:
    - New website at **www.EngGeoMB.ca/OurFuture**
    - Billboards around Winnipeg
    - NCI radio spots
    - Transit advertisements
    - Social media campaigns

STARTING DISCUSSIONS

The Department of Equity & Representation has been working on the program for over one year now. Development included the perspectives of IPIC members and considered the conversations the Association had when the department had the opportunity to host a series of focus groups with Probe Research Inc. – a professional research firm in Winnipeg – to discuss with current registered Indigenous practicing members, as well as with engineering and geosciences graduates who did not ultimately pursue a professional designation.

The purpose of these discussions was to help the Association better understand the perspectives and experiences of Indigenous engineers and geoscientists. This included their pathway into the profession, any educational or workplace barriers faced, and advice on what changes the Association can make to assist and encourage more Indigenous people to the fields of study and workplaces in the industry. The committee has also used these discussions as part of the department's environmental scan (to be released and available on the website soon), along with literary sources to provide a report on the social, economic, and political factors, implications, efforts, and barriers to accessing engineering and geoscience education in the province of Manitoba.

In that context it is important to note that, as an organization that aims to advance the visibility and participation of Indigenous peoples in engineering and geoscience (End 5.1), Engineers Geoscientists Manitoba acknowledges the ingenuity, science, trades, and technologies of those First People on the land since the beginning of time. History tells us that those First People took care of the land and developed unique ways and methods of design to survive in our province's harshest conditions – the Association acknowledges and appreciates their role as our province's original engineers and geoscientists.

THE IDEA FOR THE *OUR FUTURE* CAMPAIGN

From discussions at the Probe round tables and other research, it has been found that the severe underrepresentation of Indigenous populations in the engineering and geoscience professions remains, and the systemic factors that limit their participation must be made be a goal of the Association's mandate to achieve End 5.1. While the Association's membership grows yearly, the number of self-identifying (First Nations, Metis, and Inuit) members has remained low at one per cent.

Among the mentioned barriers that have been noted for Indigenous youth pursing an education in engineering and the geosciences is the lack of social and emotional supports throughout one's educational journey, lack of Indigenous role models in the engineering and geoscience professions, and the knowledge of engineering and the geosciences as a career choice for Indigenous youth.

WHY THE CAMPAIGN IS IMPORTANT

The committee recognizes the need for awareness of the industry and knowledge of the educational path and career opportunities in engineering and the geosciences must begin early for young people. Many of the Indigenous engineers and geoscientists that participated in the focus group discussions with Probe Research reported low awareness of engineering and the geosciences in grade school and early university. Other participants reported not knowing about the profession and the possibilities it can offer until high school or early university until "chance" instances with career councillors, teachers, or friends that sparked an initial interest. Participants noted that these were rare occurrences and relied on chance rather than intentional, system-supported, and equitable resources to pave a career path in engineering and the geosciences.

It was also important for the department to highlight the work and faces of current practitioners identifying as First Nations, Metis, and Inuit at the Association. The Association acknowledges their roles as mentors and leaders for people in a field that is not traditionally diverse.

The professions of engineering and geoscience for Indigenous peoples provides a wide range of career opportunities which could last a lifetime. Helping to create positive change and solving problems is one of the foundations for pursuing this fulfilling career direction that the committee wanted Indigenous youth to know about. Encouraging an interest in engineering begins with programming that begins at an early age. The committee hopes to spread information on the website to educators, community organizations, parents, and more, so they may use it in their discussions of STEM and the realm of possibilities involved with the field.

WHERE TO FIND DETAILS ABOUT THE CAMPAIGN

The *Our Future* webpage is live and the Association will host an official launch event in March 2023.

https://EngGeoMB.ca/OurFuture

ABOUT THE NEW *OUR FUTURE* WEBPAGE

The webpage features five Indigenous engineering students, interns, and professionals interested in improving infrastructure in Indigenous communities, giving back, and talking about their challenges and successes on their path. It is the hope that Indigenous young people can see themselves reflected in the educational path and as a future engineer.

In addition, the Department of Equity and Represenation wanted to acknowledge and let youth know about opportunities that exist for assistance with the often rigorous aspects of engineering education. The ENGAP (Engineering Access Program at the University of Manitoba) offers Indigenous students the support and resources to help young people in their journey.

THE TAKEAWAY

Empowerment, vision, knowledge of the industry, and the idea that engineers can shape the future, lead to greater innovation with diverse perspectives, and highlight the important work of our members and companies. Two of the role models profiled are currently employed with Manitoba Hydro, one of the biggest employers of engineers in our province.

FUTURE OBJECTIVES

The Committee is still seeking Elder support and are in discussions with an individual that may be able to provide that support. It is important that this individual has a background in education, traditional knowledge, and supporting youth.

Raising awareness of the industry to young people, the educational path involved, and support and mentoring opportunities for interns (a future project) will assist individuals in their journey to become an engineer or geoscientist.

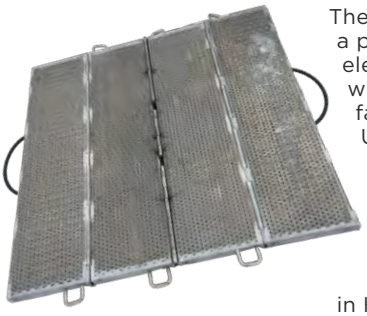
The Committee is also working to build a foundation of understanding for Association staff, Council, and members on Indigenous issues, such as the Truth and Reconciliation Commission of Canada's Call to Action, the Calls to Justice (#13.1 to #13.5) for Extractive and Development Industries from the National Inquiry into Missing and Murdered Indigenous Women and Girls (MMIWG), along with understanding on the history of colonization and marginalization of Indigenous peoples, duty to consult, Indigenous engagement, reconciliation, and traditional knowledge and its link to engineering and the geosciences.

Indigenous people entering the field should see the issues that are important to them reflected in their education, workplaces, and industry.

MANITOBA TRAILBLAZERS

CHENYANG WANG P.ENG.

Chenyang Wang was nominated alongside his partner, Emerson Adajar, P.Eng., for Engineers Geoscientists Manitoba's 2022 Innovation Award. This project, a portable grounding mat, has been recognized by US and Canadian Patents and currently is in use at Manitoba Hydro.



The portable grounding mat invented by Chen and Emerson offers a portable safe working area by providing an equipotential zone to electrical workers who may be exposed to electrical differences. It can withstand fault currents up to 53kA within 0.25 second (15 cycles) of fault current levels. Their portable grounding mat has already received US and Canadian Patents and it is light enough for a single person to carry and transport, making it ideal for working in remote areas.

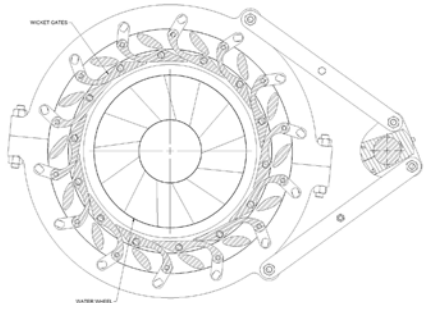
Electrical workers at Manitoba Hydro now have a much better tool to create the equipotential working zone in remote area with more confidence.

Chenyang Wang was born in Shenyang, China. He received a B.Sc. from McMaster University in Hamilton, Ontario, in 2007, and a M.Eng. from the University of Alberta in 2009, with both majors being in electrical engineering. He is currently enrolled at the University of Saskatchewan and is pursuing his Ph.D.

He joined Manitoba Hydro in 2012 as a transmission line design engineer and has worked within the Transmission Overhead & Civil Engineering Department ever since. His stay at Manitoba Hydro has allowed him to be involved with several major transmission projects such as the Riel converter station, Bipole III project, and Manitoba–Minnesota Transmission Project. Currently, he is responsible for electrical-related design for transmission lines, including lightning, grounding, AC interference, EMF, and more.

Chenyang has published more than 20 technical papers including eight "IEEE Transactions" papers. He is also recognized as a subject matter expert by external technical organizations. He is the Canadian representative on the International Council on Large Electric Systems (CIGRE) for the study committee "C3 – Power System Environmental Performance" and an active member of the CIGRE B2 TAG 4 – Electrical Design of Overhead Lines committee. Chenyang also has served as an Associate Editor of IEEE Transactions on Industry Applications since 2020.

PAUL HALIPCHUK, P.ENG.



In 2022, Paul Halipchuk was nominated for Engineers Geoscientists Manitoba's Innovation Award. He was nominated for this award for his innovative approach to overhauling the hydroelectric house unit turbine distributor at the Pointe Du Bois Generating Station, which is located on the Winnipeg River and includes two identical hydroelectric house units to provide the station service power. These units were installed during the initial generating station construction in 1911.

The condition and reliability of these units had been steadily declining over the past decades, and this project to overhaul the units mechanically and electrically was required to maintain the serviceability of these machines, which are critical to station operations.

Paul graduated from the University of Manitoba in 1998 and has been working for Manitoba Hydro ever since. Nearly all his career has been focused on machinery design for the hydroelectric turbine generators that power our province.

Paul has been the lead mechanical designer for the powertrain aspects of many major projects at Manitoba Hydro, including existing machine overhauls and the construction of new generating stations, such as the Keeyask Generating Station. Recently, a key focus of that work has been finding innovative ways to refurbish incredibly old machines, some of which were installed at the beginning of the 20th century, to restore reliability while minimizing costs and outage durations. These projects can be particularly challenging given the frequent unexpected machine condition issues and the fact that drawings made by the equipment manufacturers are scarce.

MENTORSHIP: CHANGING WITH THE TIMES

BY C. LAO ROUSSEAU

When we are speaking to colleagues, family, and friends throughout the day, we seldom stop to think of the words we use and where they come from. For example, the word 'technology' was not introduced to the science lexicon until the mid-19th century during the Industrial Revolution. Its origins, however, are Greek: originally it referred to 'technique'.

In fact, the Greek language is thought to have contributed more words to modern English than any other language – that includes French and Latin. Words like 'economy', 'grammatical', and even 'dialogue' all have roots in the Greek language, but one you might not know that comes from Greek is the word 'mentor'.

"During the ten-year Trojan War, Odysseus, the King of Ithica, left his wife, Penelope, and his son, Telemachus, to lead his army. He placed Telemachus under the care of a guardian called Mentor, whose job it was to protect and guide him," writes Foti Panagiotakopoulos, a founder at Growth Mentor, a website specifically designed to match individuals with vetted mentors from a variety of business start-ups.

In a simplified version of events, Mentor did not end up saving Odysseus's empire, but instead the goddess Athena shapeshifted into a wiser version of Mentor, who then provided the powerful guidance needed to ultimately win the battle. One could say that this is the very first recorded example of mentorship – and that was around 800 BCE.
The idea of mentoring and mentorship has made its mark in the history books, and its importance is deeply rooted in the idea that helping and teaching others has a beneficial outcome for all parties involved.

Mentorship Centre Open Seating Area

Though times have changed since the battlefields of ancient Greece, mentorship continues to be a driving force across nearly all professions in some capacity, however, because of COVID-19, the present and future state of mentorship can sometimes appear to be in a hazy transition period of change and adaptation.

Modern-day problems require modern-day solutions, which is why in a world of separation, being able to continue mentoring others is pertinent to moving forward and staying connected, regardless of where you are in your career.

One of six private workspaces available in the mentorship centre.

The Association recognizes this, which is why on January 12, 2023, we were honoured to unveil our brand-new Mentorship Centre: a space designed to meet skill development and career advancement goals for practitioners of Engineers Geoscientists Manitoba.

The Association has two mentorship programs for which practitioners are welcome to register. The Circular Mentorship Program; which is designed to support the skill development, community growth, and professional and personal goal achievement of Engineers Geoscientists Manitoba practitioners from intern to advanced level professionals through knowledge sharing, networking, and uniting of practitioners; and the Women in Engineering and Geoscience Mentorship Program, which is aimed at supporting engineering or geoscience students and interns by matching them with professional members who are working in a similar field.

These were two of many of the inspirations behind our Mentorship Centre. Designed with numerous breakout rooms with natural lighting and various meeting spots with several comfortable business-appropriate layouts, the modern centre is conveniently located on the second floor of the Association building at 870 Pembina Highway, in Winnipeg.

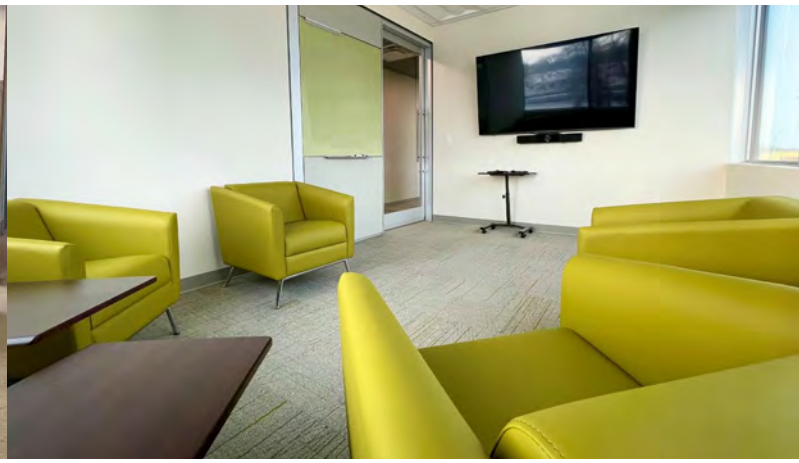
These spaces are not only great for our mentorship program, but in the world of COVID-19, the design of the Centre allows for a work environment that isn't sterile, but welcoming, private, and safe.

Being able to work remotely from anywhere is something that has surged in popularity since the beginning of the pandemic (albeit primarily due to necessity). Some offices closed their physical locations or changed to open work environments. Options for where you can securely and privately get your work done may not include your company office or the coffee shop at the end of the street anymore.

The working world has changed since 2020, and according to the Winnipeg Chamber of Commerce, will continue to do so. In November 2022, the Winnipeg Chamber of Commerce (WCC) invited Chrissie Arnold, the Director of Advisory Services at Future Forum and Slack, to speak to business leaders of Winnipeg.

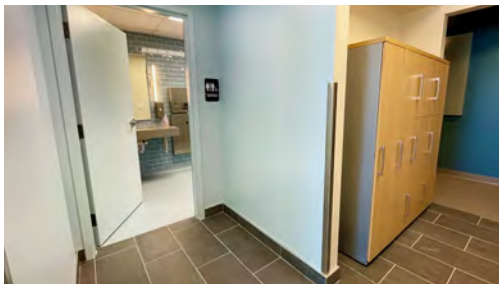
According to the WCC, "Future Forum is a consortium that focuses on shifting how we think about work. They conduct a quarterly survey of over 10,000 desk workers around the globe to collect data on the employee experience. With over two and a half years of data, their mission is to help

Landon Boardroom

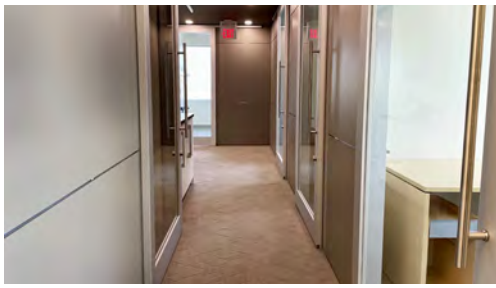


Collaboration Space

Kitchen Area



Accessible Washroom and Locker Area



Multiple Quiet Breakout Rooms

companies and organizations build a more flexible, inclusive, and connected way of work", and what they found was that people want flexibility in where they work.

"Remote and hybrid workers with flexibility overwhelmingly rank flexible work policies as the number one driver for improving their company culture. Flexible work itself improves company culture," said Chrissie during her presentation in November.

As the world continues to change, the working world is required to change alongside it.

Whether it be more places for people to work flexibly outside of the home, programs to cultivate relationships and experience with likeminded colleagues in your field, or simply the knowledge of knowing there is a safe place to quietly go and work, the Association recognizes that with community comes opportunity for change in a positive direction.

Recognizing this, the idea of the Mentorship Centre began to take place. The new Mentorship Centre includes two collaboration rooms and six private work areas that participants of either Association mentorship program can book free of charge to use as needed. Whether it is due to a lack of quiet or privacy in your daily office, adding a virtual meeting or project work time before or after you attend a committee meeting in person, or you need a place away from the home office for a day, these work areas allow participants a flexible space.

Some participants may be geographically separated from the other members of their mentorship group so the collaboration spaces have been designed to have fully built-in hybrid equipment that can be used to bring the group together for their monthly meetings. The space includes a fully accessible washroom with shower and lockers to encourage alternative modes of transportation, such as biking to work, if members are able.

If you are a current participant of one of the two Association mentorship programs and would like to book a complimentary meeting or workspace, please send your request to **Info@EngGeoMB.ca**.

During the ribbon cutting ceremony on January 12, 2023, the Association welcomed over 65 participants to tour the modern space and highlighted the careful thought that went into each private room, the fully functioning kitchen, and flexible collaboration and boardroom space now available for all mentorship participants through Engineers Geoscientists Manitoba.

Allan Silk, P.Eng., FEC, Past President, Ian Smallwood, P.Eng., President, and Michael Gregoire, P.Eng., FEC, Acting CEO, Registrar, and Secretary, at the Mentorship Centre open house and ribbon cutting.

MEMBER PROFILE
PROKOPIS PAPADIMITROPOULOS, P.ENG.

MEET THE PEOPLE THAT MAKE LIFE WORK BETTER

Mr. Prokopis Papadimitropoulos is a professional engineer that works diligently within his profession in Winnipeg, Manitoba. His dedication to teamwork and the passion that fuels his drive is something that makes him enormously proud to be a contributing member to the local engineering community. When Prokopis is not thinking about his dream project (integrating a highway section into a tunneling project in a mountainous terrain), he is spending time at home with his family, or vacationing to the Island of Greece.

WHAT WAS THE CATALYST FOR YOU TO ENTER THE ENGINEERING PROFESSION?

I always enjoyed science subjects during my schooling years. Working on construction projects for my dad in the summers while studying physics brought me closer to experiencing what the field of civil engineering was all about. Every project was different with its own challenges and demanded a unique design/construction approach. That fascinated me and led me into the engineering field – it's been a dream come true.

WHAT DOES A TYPICAL WORKDAY LOOK LIKE FOR YOU?

A typical workday for me consists of going to the AECOM office to interact and network with colleagues. Each day is different, working on various projects including designs, reports, and project management. Working out solutions to problems or sharing my knowledge and experience with other disciplinary team members gives me great satisfaction, especially when this guides projects to successful completion. The quest for better designs beyond established ones or solutions to unusual problems fuels my passion.

WHAT ADVICE DO YOU HAVE FOR PEOPLE CONSIDERING ENTERING THE GEOSCIENCE AND ENGINEERING PROFESSIONS?

It all starts with dedication to learning the skills through studying, having a good work ethic to practice the principles of engineering theory, building the experience, and belonging to teams that aspire to succeed and make a positive impact on the pursued goal. The geoscience and engineering professions are very rewarding choices of careers for individuals who have the drive to continuously look for ways to solve technical issues and provide improvements to the way of life for our communities.

WHAT'S THE MOST REWARDING PART OF YOUR CAREER?

There are two aspects of my career that I find the most rewarding. The first is when I see that the results of our teamwork have met or exceeded the expectations of the project and solved a problem. The other aspect is sharing knowledge with junior engineers. When I started practicing engineering, I was fortunate to work on teams where mentors guided and helped me along the way.

Appreciating the value of that guidance, I have taken every opportunity to share my knowledge and experience with junior staff and build their confidence and enjoyment for their work as much as possible. Knowledge and experience are building blocks of success, and it is very rewarding to see junior team members develop their skills, make good technical decisions, and therefore, build their confidence.

WHAT ARE THE THREE MOST MEMORABLE PROJECTS YOU'VE WORKED ON?

The first memorable project I worked on was at the Manitoba Hydro Limestone Generating Station. I was an engineering student and was hired for the summer as a concrete inspector. I was astonished by the size of the structure, the construction logistics and staging, and the quality control and assurance required to eliminate any risk of material or workmanship deficiencies. That experience confirmed my decision to be an engineer and instilled in me the responsibility assumed by engineering staff. I realized how critical it was that all aspects of engineering design align with the construction activities; otherwise, the structure would not function, or, more significantly, it could fail.

The next memorable project was my master's thesis project on estimating embankment settlements on the PTH 59/PTH 101 interchange. By the time I took on this assignment, I had built enough experience and looked for a project that would be constructed soon. A perfect opportunity to put the theory of my studies to the test and monitor the settlement results. After a lot of paper research, analysis, and design, as well as being mentored by Dr. Alfaro, Dr. Blatz, and Dr. Graham, the results of actual settlements proved very close to the ones predicted based on my analysis. What a reward!

The East Side Road Authority projects were also memorable. The mandate was to connect remote communities with the existing roadway networks. This was challenging because of its conflicting engineering, environmental, and social economic views and priorities.

DO YOU HAVE A "DREAM PROJECT?" IF SO, WHAT IS IT?

My dream project would be to integrate a highway section into a tunneling project in a mountainous area anywhere in the world.

WHAT DO YOU GET OUT OF ENGINEERING THAT YOU COULDN'T GET OUT OF ANY OTHER LINE OF WORK?

I can say with certainty that no two projects I have worked on so far were routine assignments. I always wonder if they could be improved if I had a chance to work on them again. All projects had a component I did not encounter previously and required a workable solution. That's what the engineering profession is all about: chasing better outcomes.

Most engineering projects demand practicing engineers with inquisitive minds to look for proven methods or devise new solutions outside the norm. It has been very fulfilling to know my contribution to an engineering assignment had a positive overall impact. My area of engineering practice involves design and construction of roadway infrastructure facilities with the goal of improving roadway safety and the level of service. In this regard, engineering gives me the opportunity to serve society by providing a better quality of life.

ARE THERE ENGINEERS GEOSCIENTISTS MANITOBA INITIATIVES THAT YOU ARE INVOLVED IN OR SUPPORT?

I have been involved extensively in the Manitoba Transportation and Infrastructure EIT program by providing mentorship to new interns and teaching technical design and project management workshops. I continue to support interns by being available as a mentor.

WHAT DO YOU HOPE THE ENGINEERING AND GEOSCIENTIST PROFESSIONS LOOK LIKE 20 YEARS FROM NOW HERE IN MANITOBA?

With Environmental Social and Governance (ESG) and climate change, there will be a lot of risk and opportunity in our engineering profession going forward. The new trend for carbon free energy will demand the development of new construction materials to replace the conventional oil base materials.

ESG will demand new challenges/ideas in engineering materials, design methodologies, and integration to construction practices, and involves risk as they will have to demonstrate performance over time and become accepted and established. Opportunities will arise from all these new concepts in the development of new materials, design methodologies, and construction practices. Engineering judgement will play a key role in the choice and degree of risk and reward in the process for success of the new engineering designs and structures.

I hope our profession will embrace the power of technology to keep pace with the environmental transformational trend of using fewer fossil fuels and their by-product materials in order to find new ways to test and develop new, innovative techniques that will help us in doing our daily work.

WHEN YOU'RE NOT WORKING, YOU CAN BE FOUND...?

At home relaxing with my dear family, reading a book, reading interesting geotechnical journals, watching Messi's moves, fishing, and vacationing in Greece with family and friends.

MEMBER UPDATE

NOVEMBER, DECEMBER, JANUARY

NEW MEMBERS

D.J. Adamson
S.T. Ahmed
R.S. Amarasinghe
A. Ayache
W.S. Beaton
T.J. Beavis
C.J.D. Bibby
L.C. Boutin
S.M. Bucsis
S.A. Butler
P. Chiaramello
J.A. David
N.P. Davidson
M.K. Deegan
L.D. Desilets
T.N. Do
B.A.J. Eirich
A. El Matni
M.W. Fast
J.S. Federico
H.J. Flesher
R.J. Gardner
A.H.H. Ghith
E. Ghorbani
E.Y.K. Girgis
M.M. Gmiterek
R.J. Goguen
J.C. Green
T.J. Greenleaf
M. Gyorfi
I.J. Hapchina
M.L. Harris
E.C. Hawley
B.E. Hilderman
J.N. Hiscock
R.L.P. Holter-Ferguson
B. Huang
S.A. Hunt
P.G.J. Jacobsen
R. Jambakhsh
J.L. Jardine
J.M.A. Johnson
Z.A. Johnson
R.J. Kelley
A.W. Kleisinger
S. Kumar Rajeshwari
O. Kuo
A.E.K. Kuronen
N.J.L. Lambert
J.E. Landriault
H. Lee
M.C. Lee
S.N. Lisi
L. Liu
W. Liu
J. Liu Prest
G.S.R. Lopushansky
K.H.R. MacCharles
A. Maddahi
A.Mann
D. Markatos
J.A. Matchett
J.S. Mbega Mve
D.J. McGinn
A.J. Melindy
A.S.A.S. Moussa
N.J.H. Mulder
M. Ng'wane
N.M.C. Nguyen
C.P. Paroshy
N.L. Penner
O. Podimov
R.P. Punzalan
M.J. Rabena
I.A. Raji
A.A. Ramadan
S.K. Reeve
V.Q.H. Ren
B.H. Rengifo Martelo
J.W. Richer
S. Santo
F. Sarihi
A.R. Savels
A. Sharma
A.J.L. Simard
G.L. Sturdy
X. Sun
Z. Taban
A.T. Tangedal
K.R. Tata
B.R. Tolman
H.M. Tomsett
V. Vallieres
J.B.S. Vallotton
S. Vasisht
C.M. Verwey
A. Vladimirsky
S. Wang
K.D. Westman
G.N. Williamson
G. Yang
R. Zhang
Y.X. Zhao
W. Zhong
C.A. Zulkoski

CERTIFICATES OF AUTHORIZATION

2703430 Ontario Inc.
o/a James Federico & Associates
Algal Engineering Ltd.
Ambit Engineering Inc.
C.F. Crozier & Associates Inc.
Canadian Natural Resources Ltd.
Coles Associates Ltd.
Delcor Engineering Inc.
DKM Engineering Ltd.
Firth Engineering Ltd.
Future Steel Buildings Intl. Corp.
Gienow Canada Inc.
o/a Robertson Building Systems
Ivindi Inc.
Katzer Survey Consulting Ltd.
Keep Consulting Inc.
Le Groupe Génitique Inc.
Litostroj Power d.o.o.
Northquip Inc.
o/a Arrowquip
Powertech Labs Inc.
Prairie Communications Ltd.
Pressure Vessel Engineering Limited
Rupert's Land Consulting Inc.
Splendid Homes Corp.
Team Power Solutions
Tolentino-Duval Engineering
TS3 Engineering Inc.
Wood Group Asset Integrity Solutions, Inc.

INTERNS

A.J. Abiodun
O.O. Abiola
S. Afsharpour
K.B. Ajo
A.G. Alex
H.H. Andemichael
R. Arora
A. Asbaghi
I.G. Atabor
M.K. Baka
V. Berezhnova
H. Berry
B.N.W.M.R.A. Boragolla
S.G. Busch
C. Cabag
J.A. Cabucol
B.E. Campbell
M.J. Carter
A.H. Charles
K.N. Ching
E.J. Colbert
P.J. Cook
K.B. Curtain
R.V. De Luna
G.G. dela Merced
I.R. Deniset
O.A. Deolu-Ajayi
E.P. Doctolero
R. Dyck
K.V. Efu
E.O. Erhie
A.L. Evangelio
L.C. Ezeogbulafor
B.S. Falloon
C.L.C. Fay
K.N. George
S. Ghanbar
I.L. Guiao
Z.C. Harris
D.C.J. Herath Hitihamillage
S.K. Hladik
M. Iqbal
J. Jancy Xavier
T.A. Kesariya
M.I. Khan
B.F. Kizilirmak
A.G. Koch
A. Kone Maiga
M.R. Korat
M.D. Koziuk
J.P. Lagman
L.R. Le Léannec
R.A.D. Llanes
X. Mi
B.O. Okene
N. Omoregie
J.V. Palacios
H.P. Pandya
G.F. Pangindian
D.G.M. Pasa
P.E.O. Pasco
P.P. Patel
T.H. Phan
V.J. Popp
T.D.N. Posch
D. Przybytkowski
N. Rakra
C.F. Roth-Masson
D. Ryabov
M.H.G. Salama
I.C. Sanchez Galeano
S.S. Sandhu
A.C. Santos
S. Saraygordafshari
C.L.G. Schneider
Y. Shi
M. Sow
K.R. Stadnek
K.W. Szaura
A.A.G. Tefs
F. Tessier
M.S. Thakar
N. Thomachan
N.M. Thomas
F.J.D.J. Tolentino
J.C. Tolentino
D.R. Topolnitsky
J.I. Vukelic
C. Wang
N.A. Wiens
W.M.I.G.J.S. Wijekoon

SPECIFIED SCOPE OF PRACTICE LICENSEES

G.B. Moralda

US TEMPORARY LICENSEES

M. Grahek
S. Krotec
J.Y. Wang

IN MEMORIAM

Michael Kurt Bauer
Samy Saber Sadaka
Victor James Tanner
Richard Gary Zebinski

NEWS+NOTES

MCRT INFRASTRUCTURE 2.0 COURSES

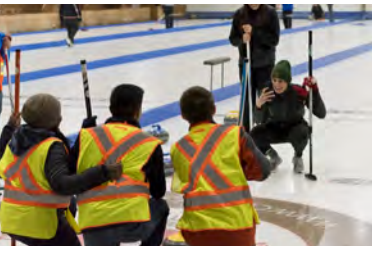
The 2023 Manitoba Climate Resilience Training (MCRT) Infrastructure Project aims to provide engineers, geoscientists, and other professionals and decision-makers with advanced knowledge and skills in climate change adaptation and mitigation.

All courses are provided free of charge. Introductory courses for each topic are hosted virtually on Zoom, with optional follow-up workshops being held in-person, where applicable. The following four course topics are available for Association members:

1. Infrastructure Climate Risk Assessment: Featuring the PIEVC Process
2. Natural Infrastructure Solutions to Enhance Climate Resilience
3. Introduction to Climate Change Through Codes, Standards, and Regulations
4. Introduction to Geothermal Engineering and Energy Modelling

Though some of the live courses may be over, information about the courses and access to the online video is available through the Association website.






2023 CURLING FUNSPEIL

January 18, 2023, marked the return of the EngGeoMB Curling Funspiel after a two-year hiatus. Eighteen teams gathered at the St. Vital Curling Club in search of a fun afternoon, prizes, and their name on the trophy. Teams were also invited to dress up in creative outfits to show their enthusiasm and team spirit while competing for the best dressed prize!

Using a cumulative high value scoring system, all teams from the seasoned league players to the non-curlers who were trying the game for the very first time had the chance to score big. Teams played five two-end games and two teams ended up tied in the top spot with 103 points.

As both teams had the same number of wins and had not played each other in the draw, the tie breaker came down to their respective scores in the final game of the day, with the team from SMS Engineering clinching the trophy!

The Sports Committee would like to thank all participants for joining this year's Funspiel and helping to raise over $4,500 to support geoscience students at the University of Manitoba.

Thank you to our sponsors:

Canada Life - Major Sponsor
FWS Group - Lunch Sponsor
KGS Group - Beer Sponsor
Canopy mgmt Maintenance Services - Competition Sponsor
SMS Engineering - Table Sponsor

NEW ONLINE LEARNING MODULE: AUTHENTICATING DOCUMENTS

Engineers Geoscientists Manitoba has developed a series of online learning modules to help practitioners find more accessible ways to fulfil their ProDev requirements and provide practitioners with guidance on the standards of practice that is expected of professional engineers and professional geoscientists within the province.

In February 2023, the Association introduced a new learning module on the topic of Authenticating Documents.

Authenticating a document identifies work that has been performed by, or under, a professional and, as such, it constitutes the practice of professional engineering or professional geoscience.

Learn more about how to use manual seals and digital signatures to authenticate documents, as well as best practices for when and how to seal professional work, as required by *The Engineering and Geoscientific Professions Act* and the by-laws.

Other modules available include Introduction to Professionalism, Code of Ethics, Good Character, Conflicts of Interest, and Using ProDev.

Members have access to the Learning Modules through the Association website or the Quick Links after they log into their online profile.

ASSOCIATION ANTI-HARASSMENT SEMINARS

These seminars are put forward by the Equity and Representation Department of the Association.

On January 26, 2023, a panel consisting of James Blatz, P.Eng., FEC, Katie Moist, P.Eng., and Michael Turko, C.E.T., Eng.L., and facilitated by Lisa Stepnuk, EIT, presented practices successfully used to stop the sexual harassment of women engineering interns and professionals on multi-party (consultant, client, contractor) worksites.

Strategies were led and/or informed by targets of harassment at key decision points. Action was taken by senior management and executives to enforce adherence to anti-harassment policies. Targets were supported and acknowledged for improving working conditions for all, by reporting inappropriate comments and behaviours.

Another seminar took place February 23, 2023, on Leveraging COR Certificate of Recognition Policy to Stop Workplace Harassment.

Sean Scott and Derek Pott of the Construction Safety Association of Manitoba (CSAM) described the COR program training and audit system, including the anti-harassment and violence clauses that adhere to the Manitoba Workplace Health and Safety Act. This is one tool that can be leveraged to promote and enforce safe and healthy working conditions.

Watch for more seminars to come in this series.

Left-Right: Presenters Michael Turko, C.E.T., Eng.L., Katie Moist, P.Eng., James Blatz, P.Eng., FEC, and Lisa Stepnuk, EIT

WESTMAN CHAPTER SOCIAL MIXER AT THE BRANDON WHEAT KINGS VIEWING LOUNGE

The Westman Chapter hosted a social outing for affiliated members to mingle while watching the Brandon Wheat Kings play at the Brandon Wheat Kings Viewing Lounge in the Keystone Center on February 10, 2023.

The event was a great success, with about 40 members in attendance. With food, sports, networking, and fun, the chapter looks forward to hosting similar events to this in the future.

ENGINEERS
GEOSCIENTISTS
MANITOBA

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