

ENGINEERS AND GEOSCIENTISTS BRITISH COLUMBIA

JULY/AUGUST 2021

INNOVATION

SENSING ICE

**HOW OKANAGAN
ENGINEERS ARE
CREATING A WAY
TO EASILY DETECT
ICE ON ALMOST
ANY SURFACE**

STRATA DEPRECIATION REPORTS

**HOW ENGINEERS
ARE HELPING
CONDO BUYERS
NAVIGATE
PURCHASES**

PARK INSURANCE :

**because you never know
what's lurking around the corner.**



Protect What Matters to You.

GET A QUOTE TODAY.

Home / Condo / Tenant / Business / Other

Call us: 604.659.3130; 1.800.663.3739 ■ **Email us:** info@park.ca

Shop online: www.park.ca/egbc



PARK INSURANCE

Northbridge Insurance / Park Insurance partnership: providing high-value insurance coverage for Engineers and Geoscientists BC for over 30 years.

Northbridge Insurance Logo is a trademark of Northbridge Financial Corporation, licensed by Northbridge General Insurance Corporation (insurer of Northbridge Insurance policies).

NEWS / DEPARTMENTS

- 5 ASSOCIATION
- 7 COUNCIL REPORT
- 14 PROFESSIONAL PRACTICE
- 35 DISCIPLINE AND ENFORCEMENT
- 38 IN MEMORIAM
- 39 CONTINUING PROFESSIONAL DEVELOPMENT
- 37 DISPLAY ADVERTISERS' INDEX

COMMENT

- 4 VIEWPOINT

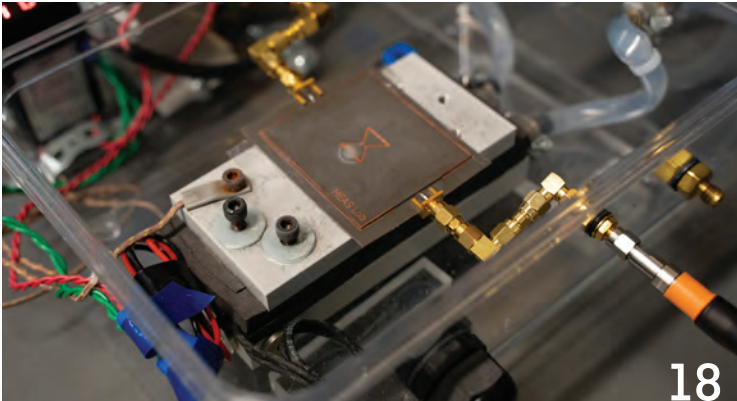
OTHER

- 5 PERMIT TO PRACTICE
- 8 MEET HEIDI YANG, P.ENG.,
ENGINEERS AND GEOSCIENTISTS
BC'S NEW CEO
- 24 VIRTUAL ANNUAL CONFERENCE
SPECIAL INSERT
- 36 PROFESSIONAL SERVICES

ON THE COVER

Ice is a meteorological reality, but can be dangerous to aircraft wings, drones, and wind turbines. BC engineers are designing a way to mitigate the threat.

PHOTO: THIAGO B. TREVISAN/SHUTTERSTOCK.COM



COVER STORY

PAINT-ON ICE SENSORS THAT CAN DETECT AND REPEL ICE

Two BC engineers combine their ideas and research to develop a durable microwave sensor that can both detect and repel dangerous accumulations of ice on aircraft wings, wind turbines, drones, roads, and sidewalks.



THE PLEASURES AND PAINS OF PREPARING DEPRECIATION REPORTS

About 10 years ago, the Government of BC updated legislation requiring that strata corporations obtain a depreciation report, intended to examine a residential building's condition, outline current repair needs, anticipate future repairs, and report on its future financial requirements. Depreciation reports can be challenging to complete, but often aid condo buyers in a very nerve-wracking purchase.



THE DIGITAL EDITION OF *INNOVATION* INCLUDES VIDEO EXTRAS. TO ACCESS, SCAN THIS QR CODE FROM ANY MOBILE DEVICE, OR GO TO EGBC.CA/INNOVATION. IN THE DIGITAL EDITION, CLICK ON THE PLAY BUTTON TO VIEW CONTENT.



ENGINEERS &
GEOSCIENTISTS
BRITISH COLUMBIA



SIGNIFICANT STRIDES UNDER THE PROFESSIONAL GOVERNANCE ACT

July 2021 was a significant month in the history of Engineers and Geoscientists BC, when we implemented two major elements of our new regulatory landscape: firm regulation and a mandatory Continuing Education program. Both elements are required by the *Professional Governance Act*, and both are destined to improve the way we meet our key mandate:

protecting the public.

On July 2, Engineers and Geoscientists BC began issuing Permits to Practice for firms that practice engineering and/or geoscience. In the first week, we issued approximately 300 permits; we expect that number to increase to around 2,000 by the end of September.

This milestone culminates countless hours of effort by staff, and significant contributions from the volunteer engineers and geoscientists that served for many years on our task force (now known as our Regulation of Firms Advisory Group). These volunteers helped implement this initiative in our province—an initiative which aligns us with almost all other jurisdictions in Canada. Firm regulation also increases both government and public confidence in the professions, and in the self-regulatory system that we value.

The work towards firm regulation was one of the reasons why I decided to run for Council in 2016. The four years I spent as a practicing engineer in Alberta earlier in my career showed me firsthand the value in regulating firms. I witnessed not only an increased attention to the quality of practice of engineering, but also felt for the first time in my career that my employer truly had an equal stake in the application of standards of engineering practice. That experience was invaluable while participating in Council's review of multiple advisory reports, utilizing the best parts of other models and finding ways to improve them. I am certain in time all of you, as well as the public, will see this as a significant improvement to Engineers and Geoscientists BC's ability to fulfill our collective mandate in protection of the public interest.

July was also when our new Continuing Education Program took effect. Like firm regulation, the Continuing Education Program is an initiative that resulted from significant effort of our staff and volunteers. I encourage each of you to watch the first Regulatory Learning module (at egbc.ca/Continuing-Education) for an excellent overview of all the changes and improvements for engineering and geoscience regulation in BC.

I cannot express my thanks strongly enough to all involved for their efforts to produce programs tailored to BC registrants that we should all be proud of. In the years to come, I fully expect some of the other regulators under the *Professional Governance Act* to begin to model or implement many of our initiatives; our staff has already been sharing what we've learned.

I am humbled to know that these programs came to fruition during my term as your president.

Larry Spence, P.Eng., President

president@egbc.ca

INNOVATION

JULY/AUGUST 2021 | VOLUME 25 NUMBER 4

ENGINEERS AND GEOSCIENTISTS BRITISH COLUMBIA

Suite 200 - 4010 Regent Street, Burnaby, BC Canada V5C 6N2

Tel: 604.430.8035 Fax: 604.430.8085

Email: info@egbc.ca Web: egbc.ca

Toll free: 1.888.430.8035

COUNCIL 2020/2021

President L. Spence, P.Eng.

Vice President C. Park, P.Eng.

Immediate Past President L. Mah, P.Eng., FEC

COUNCILLORS

Mark Adams, P.Eng.; Emily Lewis, CPA, CMA;

Suky Cheema, CPA, CA; Tomer Curriel, P.Eng., FEC;

Leslie Hildebrandt, ICD.D, LLB; Christine Lambert, P.Geo.;

Michelle Mahovich, P.Eng., P.Geo.; Nathan Ozog, P.Eng., FEC;

Jessica Steeves, P.Eng.; Dr. Tom Tiedje, P.Eng.;

Kevin Turner, P.Eng., FEC, FGC (Hon.); Jeremy Vincent, P.Geo.;

Dr. Brent Ward, P.Geo., FGC, FEC (Hon.); David Wells, JD

ENGINEERS AND GEOSCIENTISTS BC EXECUTIVE TEAM

Heidi Yang, P.Eng., FEC, FGC (Hon.), Chief Executive Officer

Jennifer Cho, CPA, CGA, Chief Financial and Administrative Officer

Max Logan, Chief Operating Officer

Mark Rigolo, P.Eng., Acting Chief Regulatory Officer and Registrar

Chris Hawley, Managing Editor

EDITORIAL ADVISORY GROUP

M.I.H. Bhuiyan, P.Eng.; E.A. Brown, P.Eng.; K.C. Chan, P.Eng., CPA;

H. Ghalibafian, P.Eng.; G. Grill, P.Eng.;

G. Kwong, P.Eng.; R. Ord, P.Eng.; R. Smerina, P.Eng.

Advertising material must reach the publication by the first day of the first month (e.g., May 1 for the MAY/JUNE issue), or by the first business day immediately preceding the first day of the first month.

Design/Production & Advertising Sales:

Advertising in Print

Sales Representative: Monique Nguyen

Tel: 604.681.1811

Email: advertising@egbc.ca

Printed in Canada by Mitchell Press Ltd on recycled paper 

Subscription rates per issue \$4.50; six issues yearly \$25.00. (Rates do not include tax.)

Innovation is published six times a year by Engineers and Geoscientists British Columbia. As the official publication of the association, *Innovation* is circulated to members of the engineering and geoscience professions, architects, contractors and industry executives. The views expressed in any article contained herein do not necessarily represent the views or opinions of the Council or membership of this association.

All material is copyright. Please contact the Managing Editor for reprint permission.

Submission Guidelines: *Innovation* encourages unsolicited articles and photos. By submitting material to *Innovation*, you grant Engineers and Geoscientists BC a royalty-free, worldwide licence to publish the material; and you warrant that you have the authority to grant such rights and have obtained waivers of all associated moral rights. *Innovation* reserves the right to edit material for length, clarity and conformity with our editorial guidelines (egbc.ca/innovation-editorial) and is under no obligation to publish any or all submissions or any portion thereof, including credits.

ISSN 1206-3622

Publications Mail Agreement No 40065271. Registration No 09799.

Return undeliverable Canadian addresses to *Innovation*, Suite 200 - 4010 Regent Street, Burnaby, BC V5C 6N2.



APPLICATIONS FOR PERMIT TO PRACTICE NOW OPEN UNTIL SEPTEMBER 30

Under the *Professional Governance Act* (PGA), firms that engage in the practice of professional engineering or professional geoscience are now required to register for a Permit to Practice (found at egbc.ca/Firms) in BC. July 2 marked the beginning of the three-month registration window for firms required to register. Firms must complete their registration by September 30, 2021.


The regulatory model includes all firms in the private and public sector that engage in the practice of professional engineering or geoscience as part of their operations, including firms that only provide these services internally (including advice or services provided internally by an Engineers and

Geoscientists BC professional registrant to another employee or individual acting on the firm's behalf).

If you are unsure whether your firm is required to register, visit the Who Needs a Permit to Practice page (egbc.ca/Assessment-Tool) for a list of firms included under the regulation.





You can also use the Permit to Practice Assessment Tool for further assistance.

Before beginning the registration process, visit the How to Apply for a Permit to Practice page to prepare required information. If you have further questions, visit egbc.ca/Firms, or contact firms@egbc.ca.



SITE CHARACTERIZATION SERVICES



- GEOTECHNICAL DRILLING
- ENVIRONMENTAL DRILLING
- EXPLORATION DRILLING
- IN-SITU TESTING
- GEOPHYSICAL TESTING

WE LEAD SAFETY / WE ARE QUALITY / WE ARE PROFESSIONAL / WE ADD VALUE

MUD BAY DRILLING.COM

A MEMBER OF THE CONETEC GROUP OF COMPANIES.

TRAINEES NOW ELIGIBLE TO VOTE IN COUNCIL ELECTIONS, ANNUAL GENERAL MEETINGS

Beginning in 2021, Engineers and Geoscientists BC's more than 8,000 trainees (EITs and GITs) in good standing will now be eligible to vote in the Council election, and propose and vote on annual general meeting motions.

The request to extend voting rights to trainees originated from a passed motion at

Engineers and Geoscientists BC's Annual General Meeting in 2017. During a consultation process that followed, some trainees expressed they didn't attend annual general meetings because they couldn't vote (but said they would attend if voting rights were extended to them), and most registrants indicated that trainees ought to have more ability to participate in self-regulation. Some also expressed hope that including trainees in governance matters may boost the involvement of women and increase the retention of women in the industry.

In 2018, Council appointed a task force to examine this potential change, which at the time would have required modification of the now-repealed *Engineers and Geoscientists Act*. The task force recommended extending voting rights to trainees; Council agreed and, following consultation, included voting rights for trainees in the new Engineers and Geoscientists BC Bylaws that support the *Professional Governance Act*.

CONSTRUCTION MONITORING SYSTEMS SALES, RENTALS, SERVICE AND TRAINING



GEOTECHNICAL INSTRUMENTATION SOUND VIBRATION AIR QUALITY

Data Acquisition Systems, Remotely Controlled,
Automated, Affordable, Wireless Turnkey Solutions
from Hoskin Scientific - Serving Canadians for 75 Years



www.hoskin.ca

JUNE 25, 2021

Engineers and Geoscientists BC's Council of elected registrants and government representatives meets throughout the year to conduct the business of organizational governance. The following are the highlights of its June 25, 2021 meeting.

BYLAW AMENDMENTS

Council approved a series of amendments to Engineers and Geoscientists BC's Bylaws following the implementation of the *Professional Governance Act* (PGA) and supporting Bylaws in February 2021. The amendments are limited in scope and include corrections to typographical errors, minor revisions to wording for clarity, and targeted amendments to address minor issues that have been identified since the Bylaws were passed—for example, an amendment that removes the requirement for non-practising registrants to provide their industry/area of practice and business contact information.

Council also approved a Bylaw to enable it to grant a fee waiver in recognition of exemplary service to the organization by a registrant serving as Council president. The Bylaw is intended to be a temporary measure that will remain in place until a formal remuneration policy for Council is developed, which is intended to establish a long-term process for recognizing the significant time commitment associated with these roles, and the need to continue to attract qualified candidates to support the expanded regulatory role of the organization.

Bylaw amendments are reviewed and approved by the Office of the Superintendent of Professional Governance. Engineers and Geoscientists BC's current Bylaws are available at egbc.ca/Act.

2021 ANNUAL GENERAL MEETING RULES OF ORDER

The Annual General Meeting (AGM) will take place virtually on October 30, 2021. Registrants can hear from Council and senior staff on the organization's strategic progress, key initiatives and financial standing and bring forward motions for consideration.

Council approved the meeting rules, which include additional protocols to facilitate a virtual meeting, including requirements for how motions will be accepted for consideration at the AGM. Registrants can view the rules and register for the AGM at egbc.ca/agm.

POLICY FOR APPOINTING COUNCIL VICE PRESIDENT

Council approved a policy that outlines the process it will follow to select a vice president. Beginning this Fall, Council

will appoint one of its elected members to serve as vice president each year. This governance best practice is well-established in similar organizations and will enable Council to select a vice president who can best meet the needs of the Council in any given year, as well as supporting the transition plan for Council as it moves to a smaller size in line with requirements under the PGA.

More information on this process and the Council election can be found at egbc.ca/Councilelection.

TWO PROFESSIONAL PRACTICE GUIDELINES APPROVED

Council approved two professional practice guidelines: one for structural engineering services for tall concrete building projects, and one for the seismic assessment and seismic design of dikes. The guidelines will be published following legal and editorial review.

Guidelines and other professional practice resources can be accessed at egbc.ca/Guidelines.



Gustavson
School of Business
University of Victoria
EXECUTIVE PROGRAMS

The Masters Certificate in Project Management

Now available in our virtual classroom

With our flagship PM program being offered online there's never been a more convenient time to attend.

Knowledge and tools from the very best trainers in North America to deliver projects on time, on budget and within scope; this new online experience is **interactive, engaging and fun!**

- Multi-modal presentation of material
- Engaging activities and interactive exchanges
- Breakout discussions with the instructors and your fellow participants
- 18 days over five months = minimal impact on your work schedule.

Offered in partnership with:



Schulich
School of Business
Executive Education Centre

To discuss this program or receive a detailed brochure:

Call: 250-216-3776
Email: eisted@uvic.ca
Visit: execprograms.uvic.ca/MCPM

“Since I was young, I have always wanted to make a positive impact on society. That’s one of the reasons I became an engineer.”

HEIDI YANG, P.ENG., RETURNS TO BC TO LEAD ENGINEERS AND GEOSCIENTISTS BC

Many years in leadership roles—both in engineering and operations at private sector companies and at the Association of Professional Engineers and Geoscientists of Alberta (APEGA)—have helped Heidi Yang, P.Eng., FEC, FGC (Hon.) develop a keen eye for optimizing processes and a foundational belief in the role of good regulation in society.

Those two passions came together when she became Engineers and Geoscientists BC's new Chief Executive Officer at a pivotal time for the organization. Engineers and Geoscientists BC had just finished celebrating its 100th anniversary and was preparing to implement a new and expanded regulatory framework under the *Professional Governance Act* (PGA)—all while working through a pandemic.

"If there's one thing the last year has taught me, it's that we need to be open to change," Heidi said. "Disruption is difficult. While it challenges us, it also creates opportunities for us. It forces us look at things differently and innovate, and it forces us to focus on what's really important."

This philosophy guided Heidi as she navigated the early days of her new role, assisted by a comprehensive orientation from outgoing CEO Ann English, P.Eng., FEC. In addition to building a robust 90-day plan to narrow in on the organization's key priorities for the years ahead, one of Heidi's earliest areas of focus was the changes introduced by the PGA.

"I've been impressed with the level of work that has been done to prepare for the implementation of the PGA," she said. "It's a change, but a positive one. The PGA gives us an elevated level of governance that's going to enable us to be a better regulator. It gives us the right tools to protect the public."

Heidi was first drawn to the engineering profession through her family (her father was an engineer, along with two of her

nine siblings); she saw engineering as a way to design and build things well, and safely, for a greater purpose. "Since I was young, I have always wanted to make a positive impact on society. That's one of the reasons I became an engineer." After graduating from UBC with a degree in chemical engineering, Heidi spent 20 years at Weyerhaeuser, where she gained multi-faceted experience in engineering operations; eventually, she used her mindset of collaboration and continuous improvement to oversee the Grande Prairie plant's quality and customer strategies, and to overhaul its quality management system.

Although Heidi was busy with work at Weyerhaeuser, she was also drawn to volunteer at APEGA—first as the outreach coordinator, and then chair, of its Peace Region branch. "My work through the branch helped me appreciate my profession and understand how regulation works to protect the public," she said. She was elected to Council, and then held several staff leadership roles—including one year as interim CEO, where she led a business planning process that enhanced APEGA's ability to deliver on its regulatory mandate and strengthen internal operations.

Immediately before joining Engineers and Geoscientists BC, Heidi led engineering operations—including research, project management, product engineering, manufacturing process engineering, and facilities and maintenance engineering—for one of the largest privately-owned window and door manufacturers in Canada.

Heidi believes that her value of "bias towards action"—the idea that all processes can be continuously improved and made more efficient—is a good fit in both private and regulatory sectors. "Status quo isn't good enough," she said. "I lean towards action and continuous improvement. Something may have been executed well, but what could we improve upon? I am always looking for ways we can do things better."

Heidi said that applying that principle to Engineers and Geoscientists BC is bound to pay dividends. "We have the opportunity to create a better future through regulation, and everyone at Engineers and Geoscientists BC really wants to be the best regulator that we can be. We are embarking on some exciting times, and I am looking forward to leading the organization into the future."

CONTINUING EDUCATION PROGRAM: REPORTING SYSTEM AND MANDATORY REGULATORY MODULE NOW AVAILABLE

Under the *Professional Governance Act* (PGA), Engineers and Geoscientists BC is required to develop and implement a mandatory Continuing Education (CE) Program. The CE Program began on July 1, 2021, and registrants may now record their CE activities in the recently launched reporting system, at egbc.ca/Cep-Reporting.

In each three-year period, practising registrants must complete at least 60 CE Hours, or 20 hours a year on average. The online reporting system is used to keep record of CE Hours and activities completed by registrants. This record and their individual CE Plan must be updated on an annual basis and

CE Hours and activities must be reported annually. The first reporting deadline is June 30, 2022.

In addition to the new reporting system, the CE Program's first Regulatory learning module (egbc.ca/Online-Learning/Products) is now available for registrants and covers registrant obligations and responsibilities resulting from the implementation of the PGA. The module is one hour in length and is required viewing for practising registrants on an annual basis; non-practising and retired registrants must view at least one Regulatory learning module every three years. Once the module is completed, the CE Hours will be automatically uploaded into the reporting system.

For more information on the CE Program including applicability, areas of learning, and the number of hours required for each category of registrant, visit egbc.ca/Continuing-Education.

NEW ENGINEERS AND GEOSCIENTISTS BC FOUNDATION AWARD TO SUPPORT WOMEN RETURNING TO WORK

While the number of women in engineering careers gradually increases, a major roadblock remains: the number of women returning to their careers after taking maternity or parental leave. COVID-19 highlighted the reality that the transition back to the workforce is especially challenging for women engineers as they balance the demands of family and career.

Now, the Engineers and Geoscientists BC Foundation is accepting donations for a new award designed to help women re-enter the workforce after parental leave.

The Tricia J. Cook Memorial Fund will be issued annually to support an outstanding woman in engineering or geoscience in BC who is returning to her profession after parental leave. The fund is named after late registrant Tricia J. Cook, P.Eng., a professional civil engineer who balanced her career while raising two sons, Adam and Sean, both of whom graduated from university with engineering degrees. Tricia passed away in March 2021, after a lengthy battle with cancer. The \$2,000 to \$2,500 annual award will be provided each Fall to an Engineers and Geoscientists BC registrant who plans to return to their same employer within 24 months of taking parental leave.



PHOTO: SUBMITTED BY ANTHONY H RICE, P.Eng., P.GEO

The Engineers and Geoscientists BC Foundation is a registered charity that operates at arms-length from Engineers and Geoscientists BC. To donate to the Tricia J. Cook Memorial Fund, or any of the Foundation's other scholarships, bursaries, or awards, visit egbc.ca/Foundation.

ENGINEERS AND GEOSCIENTISTS BC ANNOUNCES CANDIDATES FOR ELECTION TO COUNCIL

Engineers and Geoscientists BC is governed by a council of elected registrants and government appointees and is accountable to the public, overseeing the governance and management of the organization. The organization's Nomination Committee is responsible for selecting candidates to stand for election to Council, following a merit-based process that seeks strong and diverse leaders that reflect the organization's registrant base.

The Nomination Committee is pleased to announce the following candidates for 2021:

Candidate	Discipline	City
President (Elected By Acclamation)		
Carol Park, P.Eng.	Biomedical	Vancouver

Candidate	Discipline	City
Councillor (Two To Be Elected)		
Mark Adams, P.Eng.	Mining	North Vancouver
Tomer Curiel, P.Eng., FEC	Mechanical	Vancouver
Nathan Ozog, P.Eng., FEC	Electrical	Vancouver
Jens Weber, P.Eng.	Software	Victoria

The 2021 election will mark Council's transition to a reduced size of 12 as required by the *Professional Governance Act*.

SELECTION PROCESS

The Nomination Committee sought candidates through ongoing communication in eNews, *Innovation*, and online, and through direct outreach to potential candidates. Candidates were selected by the committee through a merit-based process that considered their demonstrated skills in leadership, strategy, financial literacy, risk management, human resources, regulatory understanding, governance, and technical proficiency.

PRESIDENT AND VICE PRESIDENT

The Nomination Committee seeks to nominate at least one more candidate than the number of vacancies per position, but must ensure each candidate meets the required criteria for the position. This year, only one candidate was determined to meet the required criteria in the president category and will therefore be elected by acclamation.

Beginning this Fall, Council will appoint one of its elected members to serve as vice president each year. This governance best practice is well-established in similar organizations and will enable Council to select a vice president who can best meet the needs of the Council in any given year.

ELECTION DATES

An email will be sent to registrants by Friday, September 17, 2021, with instructions on the electronic voting procedure. Voting will be conducted securely and anonymously, using systems contracted from Simply Voting Inc. Only electronic voting will be available.

Council election will close on Friday, October 15, 2021 at 12 PM. All registrants in good standing, including trainees, are eligible to vote.

For more information, visit egbc.ca/About/Governance/Council-Election.



Build the **future** on a **solid foundation** with help from our **IP lawyers**.

oyen wiggs

Oyen Wiggs Green & Mutala LLP

PROTECTING INNOVATION

patentable.com



ANNUAL CONFERENCE TO FEATURE KEYNOTE ADDRESS FROM PETER MANSBRIDGE, DR. JENNIFER GARDY

The virtual nature of this year's Engineers and Geoscientists BC annual conference—with the ability for registrants to attend from anywhere in the province—hasn't dampened the enthusiasm about the conference's planned keynote addresses: Dr. Jennifer Gardy, Deputy Director of

Surveillance, Data and Epidemiology for The Bill and Melinda Gates Foundation, and Peter Mansbridge, former anchor of CBC's flagship newscast *The National*.

Dr. Gardy and Mr. Mansbridge are scheduled to speak at the conference on October 27 and October 28, respectively.

In her keynote, Dr. Gardy plans to outline her vision for a 21st-century form of public health. "We must ensure that the outbreaks are "open source outbreaks", where researchers around the world can create and share vital information in real time," Gardy explains. Mr. Mansbridge will speak about what Canadian leadership looks like.

This year's conference will also include many of the same features that registrants have come to expect and value, including 11 professional development streams, 24 Continuing Education (CE) sessions that count towards registrants' new CE requirements, a virtual trade show, and networking opportunities.

Registrants that attend the conference will even be able to complete all their required CE hours for the year. A number of conference packages will be available for registrants to choose from, including the All-Access Conference Package, a Wednesday Conference Package, and a Thursday Conference Package.

For more information, visit egbc.ca/Conference.

Geotechnical Drilling Solutions

- Marine Drilling Capabilities
- Sonic Track & Truck Drill Rigs
- Instrumentation Installations
- Soil and Groundwater Investigations
- Anchor, Piling and Grouting Services

FOUNDEx
Committed to excellence since 1972

FOUNDEx EXPLORER 1

www.Foundex.com
604-594-8333 • info@Foundex.com

NOTICE OF ENGINEERS AND GEOSCIENTISTS BC 2021 ANNUAL GENERAL MEETING

The 2021 Engineers and Geoscientists BC Annual General Meeting (AGM) will be held using a virtual format on October 30, 2021, at 8:30 AM.

The Annual General Meeting is an opportunity for registrants to hear from Council and senior staff on the organization's strategic progress, key initiatives, and financial standing. It is also an opportunity for registrants to participate in self-regulation by bringing forward motions for Council's consideration.

Additional meeting rules and protocols will be in effect to facilitate an electronic meeting. Visit egbc.ca/agm for the latest information on the AGM and meeting protocols, including how to register and how motions will be accepted for consideration at the AGM.

IMPORTANT DATES

Registrants or trainees wishing to submit motions for consideration at the AGM must submit via the Motion Submission Form by September 29, 2021 at 5 PM.

Participants must pre-register for the AGM by October 25, 2021 at 5 PM, to establish secure voting credentials for the virtual meeting.



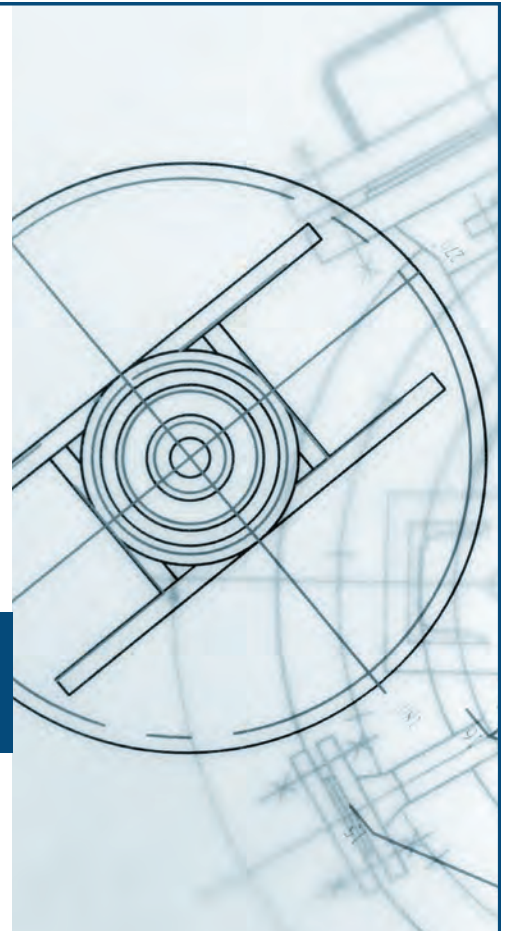
PHOTO: MIKE CRANE PHOTOGRAPHY

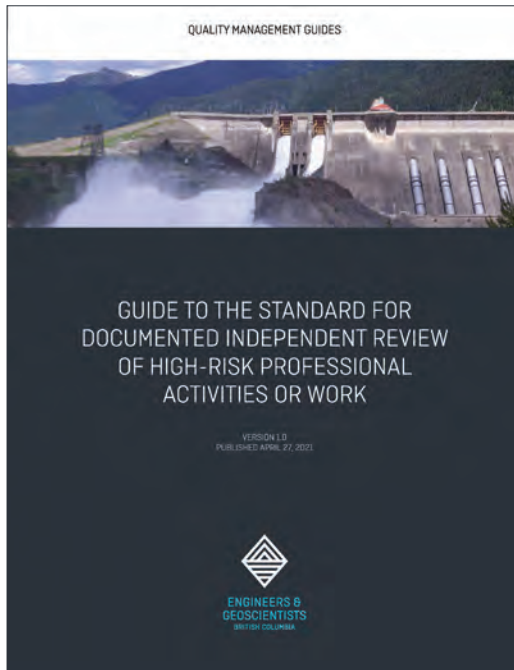
Design registration is now easier and faster than ever

Need to register a new design with Technical Safety BC?
Take advantage of our new online registration portal:

- Easy to find and fill the form you need
- Attach all supporting documents and drawings
- Track the status of your submission
- Communicate directly with the engineer reviewing your design

Get started at
technicalsafetybc.ca/register-a-design





GUIDE TO DOCUMENTED INDEPENDENT REVIEW OF HIGH-RISK PROFESSIONAL ACTIVITIES OR WORK NOW AVAILABLE

The *Professional Governance Act* requires Engineers and Geoscientists BC to establish standards of practice, conduct, and competence that all registrants must comply with. These standards are established in Engineers and Geoscientists BC's Bylaws.

To support registrants in understanding these standards, Engineers and Geoscientists BC publishes Quality Management Guides. These guides explain the standards for quality management in professional activities and are based on the former Quality Management Guidelines.

Engineers and Geoscientists BC recently published the *Guide to the Standard for Independent Review of High-Risk Professional Activities* (version 1.0). This guide, based on the new Bylaw requirement, was introduced to clarify requirements that were previously embedded in other Quality Management Guidelines.

The guide outlines how registrants should uphold their professional obligations while involved in high-risk professional activities or work (HRPAW) and while conducting independent reviews of HRPAW. It also formalizes the existing requirement for registrants to use a risk-based approach to documented checks. Under this standard, a professional activity or work that has been identified by a Professional of Record as high-risk through a documented risk assessment must undergo a documented independent review(s) before the professional activity or work is submitted to those who will be relying on it.

The guide also provides a common approach applicable to all registrants who engage in HRPAW or the independent review of HRPAW as part of their professional activities.

All Quality Management Guides and Professional Practice Guidelines can be found on the Practice Resources section of our website, at egbc.ca/Guidelines.

Questions about standards of practice can be directed to practiceadvisor@egbc.ca.

Get ahead with the right legal experts

Clyde & Co works with clients throughout the lifecycle of major infrastructure projects across the globe, providing practical, commercially astute advice on transactional & contentious issues

CLYDE&CO

3 Offices in Canada:

- Montréal
- Toronto
- Vancouver

“ A leading infrastructure practice across all asset classes ”

50+ 6 440 1800

Offices* Continents Partners Lawyers

www.clydeco.com

*Includes associated offices

UPDATED AND NEW PROFESSIONAL PRACTICE GUIDELINES NOW AVAILABLE; PRACTICE ADVISORY ISSUED ON RELYING ON THE WORK OF A SPECIALIST

Engineers and Geoscientists BC has issued an updated version of the *Professional Practice Guidelines - Mechanical Engineering Services for Building Projects* and published new Professional Practice Guidelines on Local Government Asset Management. Engineers and Geoscientists BC also issued a practice advisory on Relying on the Work of a Specialist.

PROFESSIONAL PRACTICE GUIDELINES – MECHANICAL ENGINEERING SERVICES FOR BUILDING PROJECTS.

The *Professional Practice Guidelines – Mechanical Engineering Services*, originally published in 1993, have been updated to reflect current industry standards and practices and references to the *Professional Governance Act*. These guidelines were developed for engineering professionals, statutory decision-makers, regulators, the public, and other stakeholders who might be involved in, or have an interest in, mechanical engineering services for building projects in BC.

These guidelines provide guidance on professional practice for engineering professionals who conduct the practice of mechanical engineering for buildings governed by parts of Division B of the BC Building Code and the City of Vancouver Building By-law. Engineers and Geoscientists BC is planning to host a webinar in the Fall that will inform professionals on the application of these guidelines when providing engineering services for building projects in BC.

PROFESSIONAL PRACTICE GUIDELINES – LOCAL GOVERNMENT ASSET MANAGEMENT

The *Professional Practice Guidelines – Local Government Asset Management* were developed by Engineers and

Geoscientists BC to guide professional practice related to engineering and geoscience professionals working in and contributing to the practice of Asset Management in Local Governments in British Columbia, including contributions to the preparation of Asset Management Policies, Asset Management Strategies, and Asset Management Plans, as well as other inputs to the Asset Management planning process.

These guidelines were first published in 2021 to provide guidance and establish a standard for professional engineering and geoscience practice in the Local Government Asset Management field. The guidelines give an overview of the Asset Management process commonly used by Local Governments in BC and highlight professional practice considerations at each stage of the process. The guidelines also discuss professional responsibilities around considering and incorporating natural asset management. These guidelines were completed and made available on July 29, 2021.

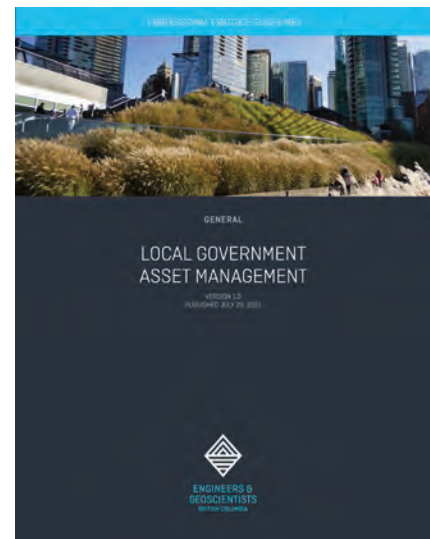
PRACTICE ADVISORY – RELYING ON THE WORK OF A SPECIALIST

Engineers and Geoscientists BC issued a practice advisory to inform registrants of the conditions under which they may rely on a specialist to inform or contribute to engineering or geoscience work.

Professional practice guidelines often refer to what is considered acceptable collaboration between professional registrants of Engineers and Geoscientists BC and non-registered specialists, as part of engineering or geoscience practice. Non-registered specialists are individuals with specialized technical skills who are not registered with a professional regulatory body in British Columbia.

Typically, a non-registered specialist is engaged when an engineering or geoscience professional does not have competency or direct experience in certain specialty subjects, and the skills of a specialist are required, either to provide direct input into the engineering or geoscience professional's own work or to provide complementary technical services.

All professional practice guidelines and other practice-related resources are provided at egbc.ca/Guidelines.





Glaciers, like this one in northwestern British Columbia, are losing mass because of climate change. Understanding the hydrological impacts of shrinking glaciers is necessary to plan for the future effects of climate change, as they provide an important source of water for human use and fish habitat.

PHOTO: STEFAN GRONSDAHL/PALMER

INCORPORATING CLIMATE CHANGE INTO PROFESSIONAL PRACTICE

Climate change is a broad issue that impacts the daily work of many professionals, including professional engineers and professional geoscientists; however, until recently, climate science and climate risk management haven't been recognized by Engineers and Geoscientists BC as official areas of engineering or geoscience practice.

The recently developed Climate Change Action Plan has changed that. It sets out a strategy for Engineers and Geoscientists BC to support its registrants in incorporating climate change considerations into their practice, and included an action to introduce climate science and climate risk management as two new areas of practice.

This change allows registrants to self-declare their expertise in climate science or climate risk management, which reflects the long-term need for climate-related competencies in engineering and geoscience, and enables Engineers and Geoscientists BC to support registrants

working in these areas through education and knowledge sharing opportunities.

Two registrants who recently declared climate science and climate risk management as one of their areas of practice explain how they take climate change into account as part of their daily work.

MEET STEFAN GRONSDAHL, HYDROLOGIST WORKING IN CLIMATE SCIENCE

Stefan Gronsdahl, P.Geo., is a hydrologist working at Palmer, a company specializing in advancing environmental assessments and permitting for mining, infrastructure, water and wastewater, and land development projects. He chose climate science as an area of practice because there is a clear connection to his daily work.

"The divide between climate science and hydrology is a grey line—they go hand in hand. If you are looking to understand water management issues in the future, it's important to factor in climate science," Gronsdahl said.

As a hydrologist, he sees the new climate science area of practice as an important way to recognize climate change more explicitly amongst professional registrants who already incorporate it into their practice.

"It's a small step, but it's an important step that fits the general trend. It's like a slow wave that's gradually grabbing momentum," he said.

CLIMATE SCIENCE APPLIED IN DAILY PRACTICE

Each day, Gronsdahl tries to understand how a change in climate will affect water resources. "It affects how we design infrastructure, land-use planning, flood plains, and managing fisheries. All these different sectors look at the future of whether or not there will be enough water and enough fish," he said.

Ultimately for Gronsdahl, incorporating climate science is not a choice.

"For me, to act in good faith and practice up to an appropriate standard, I feel that I have an obligation to incorporate climate science," he said.

MEET LEYA BEHRA, ENGINEER WORKING IN CLIMATE RISK MANAGEMENT

Leya Behra, P.Eng., recently became the Manager, Climate Action at the City of New Westminster. The climate risk management area of practice is very relevant to her new role incorporating city and land use planning.

"I was previously working in energy planning. Risk management comes up more frequently now when thinking about long range planning for the city and how we will achieve our climate goals," Behra said.

As a seasoned engineer, she views this new area of practice as a small change, but one that illustrates the direct impact engineers have in managing climate risks.

"We want engineers in these spaces, whether it's in heavy technical work or in planning. It's nice to see climate risk management more recognized. I would love to see that area continue to expand in our profession," she said.

In her role at the City of New Westminster, Behra supports the engineering asset management team in climate risk management through two different paths: adaptation and mitigation. Some of the ways the City approaches adapting to a warmer climate includes increasing tree canopies for shade, and planting tree species that will survive in hotter weather.

"To mitigate climate risks, we are working to decrease greenhouse gas emissions, increase cleaner modes of transport, encourage active transport, and look for other clean energy sources," she said.

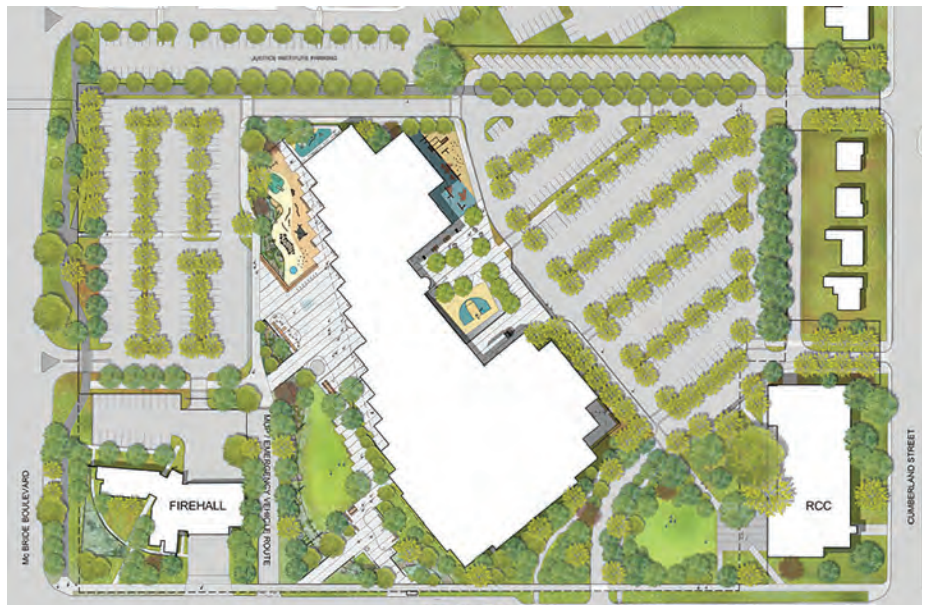
HOW DOES CLIMATE RISK MANAGEMENT PROTECT THE PUBLIC AND THE ENVIRONMENT?

According to Behra, climate risk management has a clear connection to environmental and public interests.

"The climate risks that have been identified will affect people's health, infrastructure,



The under-construction tamasewtx™ Aquatic and Community Centre in New Westminster will be the first aquatic centre in Canada to achieve the Canadian Green Building Council Zero Carbon Building Standard. It has been designed to LEED Gold standards, resulting in a 90 percent reduction of GHG emissions compared to the previous building. PHOTO: CITY OF NEW WESTMINSTER



Plans for the tamasewtx™ Aquatic and Community Centre in New Westminster. PHOTO: CITY OF NEW WESTMINSTER

landscape, food production and so much more. We must actively understand those risks and incorporate them from a planning perspective," Behra said.

She explained that engineering has typically used historical trends for modeling, but now will need to use future projections as well.

"If we build today for the historical thirty-year normal, we may not be prepared for what's to come in fifteen years," she said.

Behra emphasized that climate risk management requires being proactive

instead of reactive, leading to greater preservation of our environment and the species inhabiting it.

INFORMATION AND RESOURCES

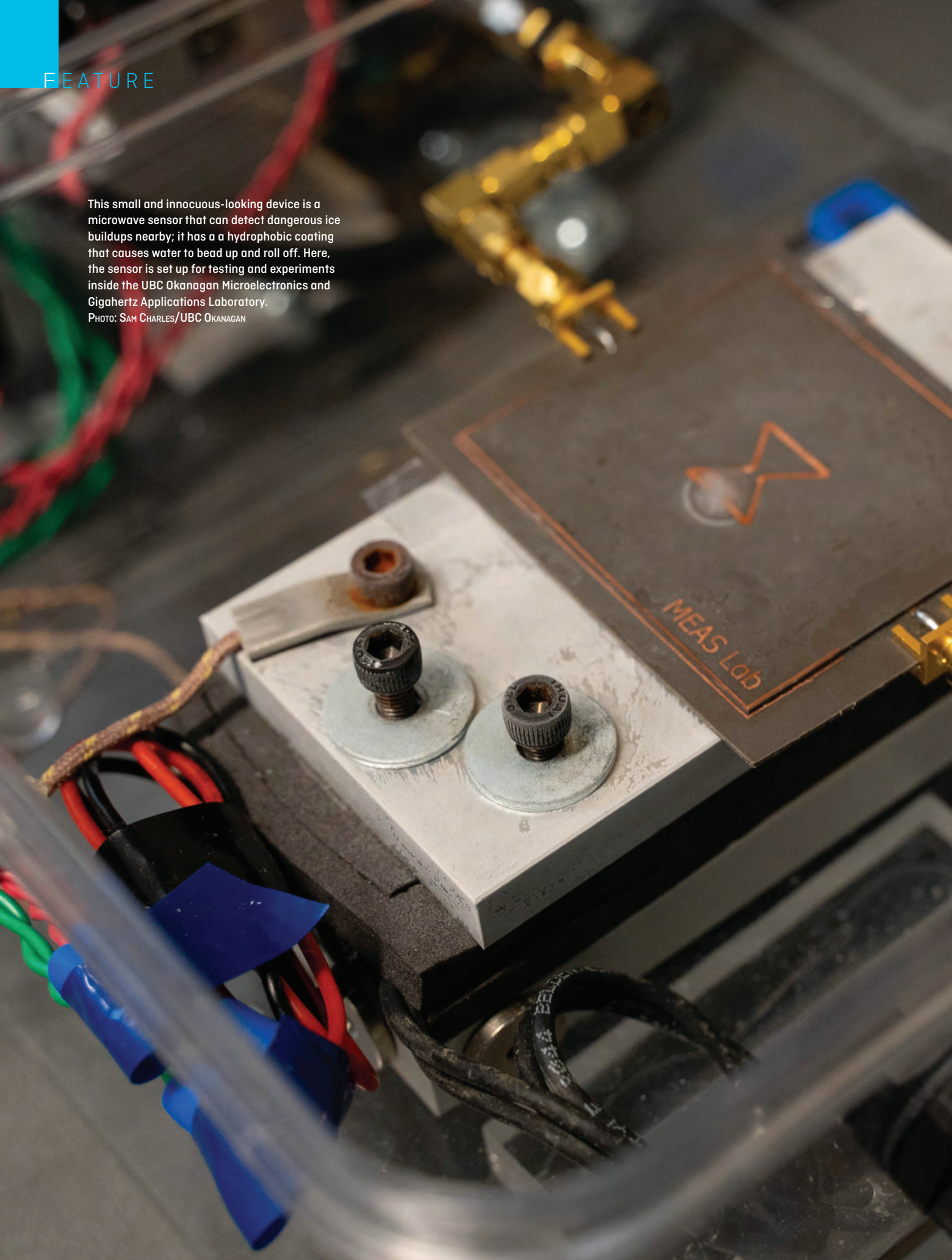
Registrants with relevant skills and experience may declare climate science and/or climate risk management as their areas of practice at any time by logging into their registrant account.

To learn more about the Climate Change Action Plan and the key steps we are taking to support registrants, visit egbc.ca/climatechange.

FEATURE

This small and innocuous-looking device is a microwave sensor that can detect dangerous ice buildups nearby; it has a hydrophobic coating that causes water to bead up and roll off. Here, the sensor is set up for testing and experiments inside the UBC Okanagan Microelectronics and Gigahertz Applications Laboratory.

PHOTO: SAM CHARLES/UBC OKANAGAN

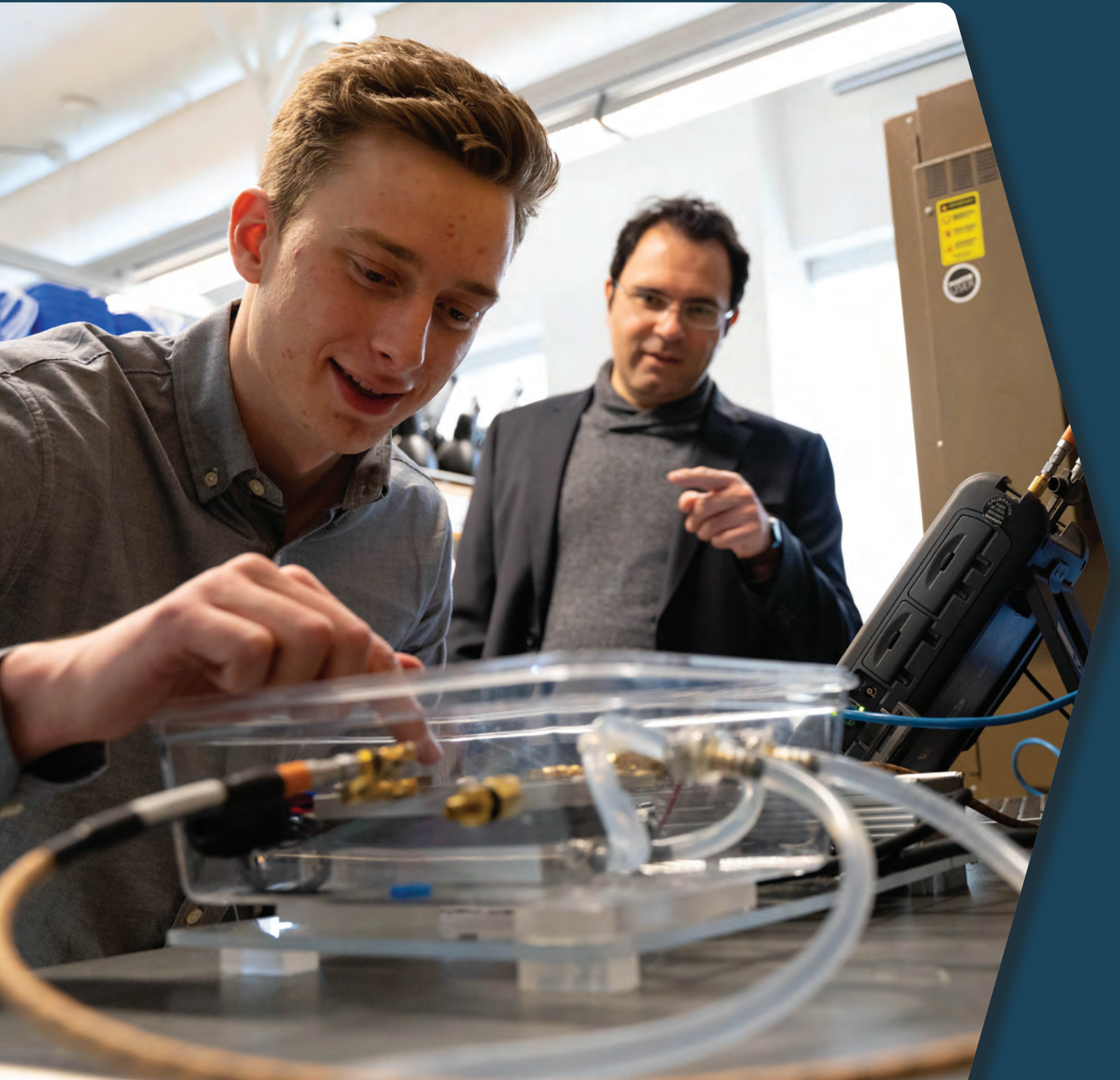




FROM “COFFEE TALK” TO BREAKTHROUGH INVENTION: PAINT-ON ICE DETECTION SENSORS THAT COULD MAKE WINTER A LOT SAFER

What do airplane wings, wind turbines, drones, roads, and sidewalks all have in common? They can all accumulate dangerous ice. But now, two engineers from UBC Okanagan are testing a paint-on coating that can not only sense when ice is about to form but also help delay and even prevent it, making our skies, streets and walkways much safer.

ROBIN J. MILLER



Assistant Professor Mohammad Zarifi, P.Eng. (right) oversees Ryan Kosak's adjustments to an ice detection sensor experiment.
PHOTO: SAM CHARLES/UBC OKANAGAN

Growing up in Iran, Mohammad Zarifi, P.Eng., was a stargazer who, said a recent profile of the UBC Okanagan (UBCO) assistant professor, “pointed a telescope towards the dark sky above the nearby Eynali mountain range, marvelling at the celestial wonders before him.” But Zarifi’s path has now taken him to a distinctly lower elevation: a mere two or three thousand feet off the ground where ice clouds can coat an airplane’s wings with potentially disastrous consequences. “Right now,” said Zarifi, “pilots look out their windows. That’s the primary way they get information about ice on wings.” Not exactly scientific, or reassuring, which is why the Canadian Department of National Defence was first in line to fund Zarifi’s ongoing research into a far more reliable way to detect ice formation using microwave sensors.

Zarifi and his team at UBCO’s Okanagan Microelectronics and Gigahertz Applications (OMEGA) Lab concentrate on designing sensors using microelectronics or, increasingly, microwave technology. “Microwave technology is used everywhere today—in radios and cell phones, for example,” said Zarifi. “It’s how they transmit and receive. A microwave sensor is the same kind of a concept except we are using the waves to communicate with molecules. You send a wave to the molecules and the molecules start to react, to vibrate, to that signal. We talk to them and they talk back.”

Until just a couple of years ago, OMEGA’s work was largely directed at how to apply microwave sensors

in the oil and gas industry, but then Zarifi had what he called a “coffee talk” with a UBCO colleague.

Assistant Professor Kevin Golovin, P.Eng., leads the Okanagan Polymer Engineering Research and Applications (OPERA) Lab. “Kevin’s research is focused on hydrophobic surfaces,” said Zarifi, “surfaces that repel water or ice.” The OPERA lab has, for example, collaborated with Arc’teryx to make sustainable, non-toxic, water-repellent clothing for outdoor adventurers, and done cutting-edge work in the area of low-interfacial toughness (LIT) materials—coatings that can cause ice to crack and slide

off just about any surface, including a windshield or an airplane wing.

Said Zarifi, “One day Kevin and I were just talking and all of a sudden we came up with the idea of uniting the powers and knowledge of our two labs to see if we could develop a new technology that could both detect and repel ice on various surfaces.” The two engineers quickly realized that “one of the many really, really interesting things about microwaves is that they bring us real-time, wireless and contactless capabilities. Microwave sensors don’t actually have to touch ice or water to detect them when they occur. There can be a gap between the sensor and the ice or water.”



Future Innovators Start Here

With a global reputation for academic excellence and university preparation,

St. Michaels University School is a leading Canadian co-ed boarding and day school with an emphasis on science, technology, engineering, arts and mathematics (STEAM).

Students learn alongside peers from more than 30 countries and our award-winning faculty. Character education, athletics and outdoor education opportunities complement one of Canada’s largest AP programs.

Find out if the Grade 8-12 experience in Victoria, BC is the right fit for your family at smus.ca

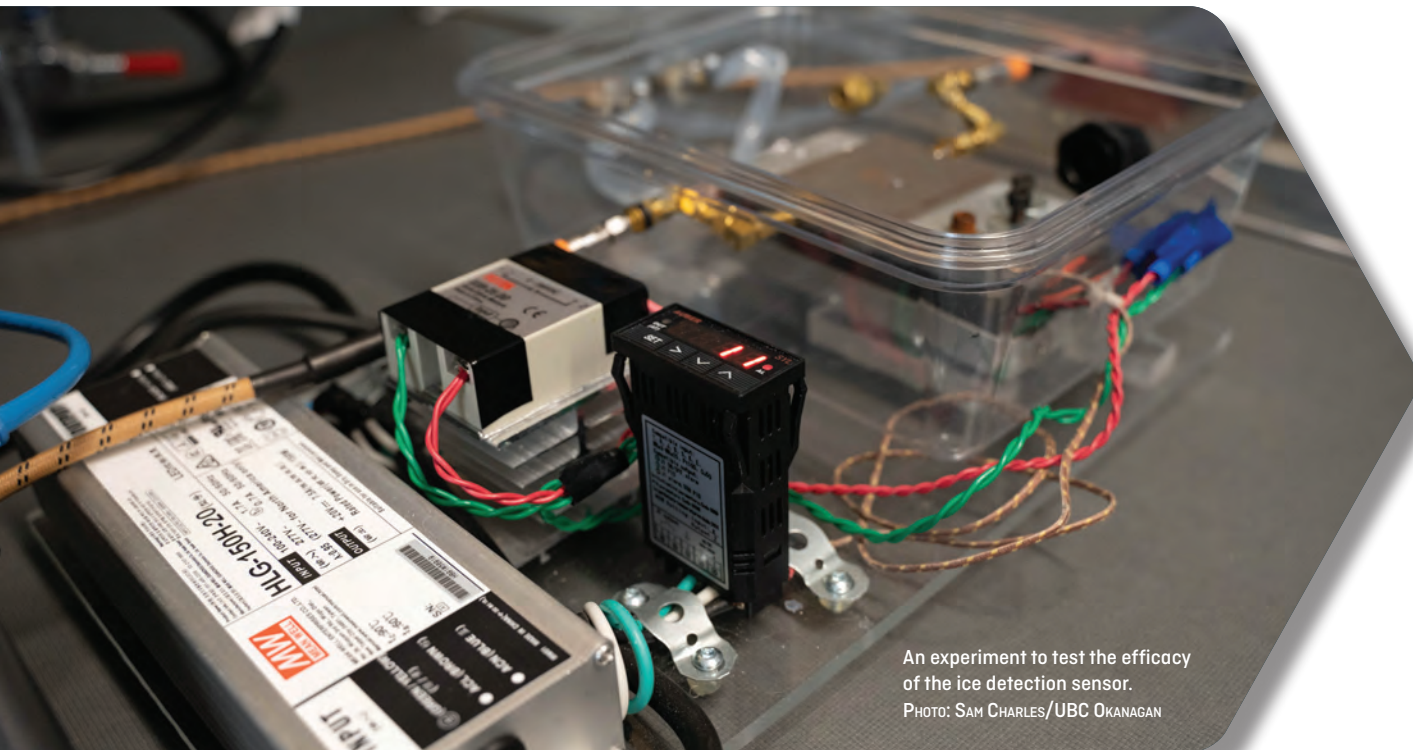


St. Michaels
University School

*Merit scholarships available
for boarding students*



Graduate student Ryan Kosak adds water droplets to the ice detection sensor.
PHOTO: SAM CHARLES/UBC OKANAGAN



An experiment to test the efficacy of the ice detection sensor.
PHOTO: SAM CHARLES/UBC OKANAGAN

From there, it was a quick leap to the idea of integrating planar microwave sensors into a coating that could be applied to a variety of surfaces. “Our microwave sensors are 2-D structures,” Zarifi said. “You can bend them, you can glue them, and, through this project, we determined that you can even paint them on. The sensor and the coating can be combined into one, which is very important because it makes them more durable.” On an airplane wing, for example, they have to be able to stand up to exposure to water and very cold or very hot temperatures. “The coating will do several jobs, the most important of which is to protect the surface of the sensor so it can operate for a longer time.”

At the same time, the coating will act to delay or prevent ice from forming. “The coating is known as an anti-icing coating,” said Golovin. “It’s made of silica particles that are trapped within a polymer resin—you can think of them as having a Teflon outer layer and a glass inner layer. It’s been designed to reduce the formation and accretion of ice by having a highly, highly textured surface that’s also been made hydrophobic through its chemistry. It causes water droplets to bead up and roll off.”

Figuring out how to combine the sensors with the coating was, said Golovin, “most likely the biggest challenge in the project, simply because the sensors had never been operated at low temperature before. Small things like the power cables—getting frost on them would cause them to short out.” But overcoming that challenge also led to a major discovery for Golovin and his OPERA Lab students. “Before

we had access to these novel types of sensors,” he said, “the way in which we would characterize how much a coating would delay droplets from freezing was visual. We would watch the liquid transform from liquid to solid, and then visually detect when ice was forming. The sensor readings informed us that the solidification process was actually much more involved, and was happening much more quickly, than we initially thought.”

For aircraft, in particular, this is vital information. “Airplanes do have ice sensors now,” said Golovin. “They look kind of like a little stick coming off the underside of a wing. But it’s a rudimentary way of sensing ice. They basically work through a thermal measurement. When ice forms on the stick as the plane flies through the air, you know the ice is present but you don’t know anything else about

it. The sensors that we’ve developed give you real-time information on the thickness of the ice as it grows, so you know that when it reaches a critical thickness you should turn on the ice protection system to remove it.”

The UBCO sensors can also tell when water is sitting on the wing’s surface before it turns to ice, and calculate how long any ice that has formed will take to melt, “so there’s just a lot more information there beyond whether you’ve got ice, yes or no,” said Golovin. And, because the coated sensors are “fairly cheap to make, you could have an array of them along the wing to detect not just the overall conditions of the airplane, but also determine where the ice is—there’s more ice over here, there’s no ice over there—and then you could potentially optimize the de-icing, using it in some spots rather than turning it on everywhere.”

CONTINUES ON PAGE 29...

NORTON ROSE FULBRIGHT

**When you need a team with
deep industry understanding,
we’re there.**

At Norton Rose Fulbright, we combine extensive local experience with global perspective. Our dedicated team provides highly pragmatic legal advice in construction, engineering and infrastructure. Wherever you are looking next, we have the in-depth knowledge to meet your needs.

Law around the world
nortonrosefulbright.com





ENGINEERS &
GEOSCIENTISTS
BRITISH COLUMBIA

OCTOBER 27 – 28, 2021 ♦ VIRTUAL CONFERENCE

ENGINEERS AND GEOSCIENTISTS BC 2021 ANNUAL CONFERENCE

CONFERENCE INFORMATION

ENGINEERS AND GEOSCIENTISTS BC 2021 ANNUAL CONFERENCE

The Engineers and Geoscientists BC 2021 Annual Conference is going virtual for the second year in a row! The annual conference will include many of the features registrants have come to expect and value, including continuing education sessions, topical streams, exhibitor booths, and keynote speakers. The virtual nature of the conference is ideal for professionals working remotely, and will also provide access and flexibility to registrants across the province.

ENGINEERS AND GEOSCIENTISTS BC ANNUAL GENERAL MEETING

WEDNESDAY, OCTOBER 30, 2021 | 8:30 AM–12:00 PM.

The AGM is free to attend, but registration is mandatory by Monday, October 25, 2021 at 5:00 PM, Pacific Time.

KEYNOTE SPEAKERS

WEDNESDAY, OCTOBER 27, 2021

Public Health 2.0 COVID-19 and the Open Source Outbreak

Dr. Jennifer Gardy, Deputy Director of Surveillance, Data & Epidemiology for The Bill and Melinda Gates Foundation



With a blend of scientific knowledge and on-stage magnetism, Gardy sheds new light on themes such as disease transmission, vaccine equity, and what public health collaboration could mean for our species. Gardy will discuss the implications of COVID-19 on healthcare systems, the future of healthcare, lessons learned, and the impacts of the pandemic in health and tech industries. In a globally connected world with a rapidly expanding population, identifying and stopping future pandemics before they spread is more critical than ever.

THURSDAY, OCTOBER 28, 2021

Our National Stories: Inspiring Canadians At Home and Abroad

Peter Mansbridge, Chief Correspondent of CBC News & Anchor of The National for 29 Years



What does Canadian leadership look like? Is there something special, and vital, about leadership in this country? In this engrossing talk, based on his reporting from around the world, Peter Mansbridge offers accounts of extraordinary acts of leadership by ordinary Canadians, at home and abroad. He speaks of stories of courage and selflessness, from Sri Lanka to the Netherlands, Afghanistan to our own Indigenous communities, to show us that Canadian leadership is, at core, about caring. It's about being there for our neighbours—down the street, across the country, or even around the world—when and where they need us the most.

CONTINUING EDUCATION PROGRAM

The Engineers and Geoscientists BC 2021 Annual Conference will bring together engineers and geoscientists from all over the province for a virtual learning and networking experience.

Attend conference and obtain your Continuing Education (CE) hours. You can earn up to 34 CE hours in one event! Here's how:

- Attend all the live presentations (8 CE hours)
- Attend all the breakout sessions' recordings (24 CE hours), and
- Attend 2 keynote presentations (2 CE hours).

Breakout sessions and keynotes will be available on demand. Please see conference packages for details.

WEDNESDAY, OCTOBER 27, 2021

Regulatory Stream

Professional Governance Act—Overview of Major Regulatory Changes | Stuart Nash, P.Eng. and Amy Fehr, P.Eng.

The Office of the Superintendent of Professional Governance (OSPG) | Speaker to be confirmed

Introduction to the Practice Advice Program | Dan Rankin, P.Eng. and Allison DenToom, P.Eng.

Lessons Learned from Investigation and Discipline | Jesse Romano

Better Business Stream

Negotiations Excellence | Joanna Marie Shea

The New Reality—A Risk and Insurance Perspective | Brad Greening, Felix Buhociu, Madison Britz, and Marlowe Mercado

Engineering and Geoscience in the Resource Sector Stream

Summary of *Guidelines for Professional Services in the Forest Sector—Crossings*, Version 3 | Lee Deslauriers, P.Eng.

The British Columbia Extreme Flood Project | Robert Keith McLean, P.Eng.

Municipal Engineering Stream

Province of BC's Existing Buildings Renewal Strategy | Andrew Pape-Salmon, P.Eng.

Design Guidelines for Drinking Water Systems in BC | Stephen Horsman, P.Eng. and Dr. Sabrina Diemert, P.Eng.

Diversity and Inclusion Stream

Moving Beyond EDI—Bolstering Belonging | Dani Delaloye, P.Eng., Dr. Cheryl Nelms, P.Eng., Christopher Michael Mealing, P.Eng., Chunpreet Sahota, P.Eng., and Marcie Cochran, P.Eng.

Future Workplaces That Work for All Through Workplace Inclusion | Erin Davis

THURSDAY, OCTOBER 28, 2021

Ethical Stream

Ethics in Action | Efram Swartz, LLB and Lindsay Steele, P.Geo.

Community Circle Approach to Project Delivery for First Nations Communities | Freda Leong, P.Eng. and Robyn Casement, P.Eng.

Inching Towards Reconciliation | Sandy Carpenter

Environmental Engineering and Geoscience Stream

Guidance for Technical Assessments in Support of Groundwater Use Applications | Michele Lepitre, P.Geo., David Alexander Thomson, P.Geo., and Julie-Ann Ishikawa, P.Geo.

Introduction to the New Dormancy and Shutdown Regulation | Brian Murphy

Energy Efficiency and Renewable Energy Stream

Scaling Up a Hydrogen Generation, Distribution, and Dispensing Network | Dr. Patric Ouellette, P.Eng.

Renewable Natural Gas and Low Carbon Hydrogen from Forestry Biomass | Edson Ng, P.Eng.

Communications and Leadership Stream

Leading with Inspiration and Hope | Adel Gamar

Delegation: The Secrets to Getting Things Done Through Others | Tara Landes

Structural Engineering Stream

Burrard Bridge Rehabilitation Project | Shane Cook, P.Eng. and David Harvey, P.Eng., Struct.Eng., FEC

Post-Disaster Building Assessment (PDBA) Guidelines for Communities | Patrick Cullen

Emerging Professional Stream

The Neuroscience of Communication for Trust and the Impacts of Stress | Jody Kennett

Positive Virtual Presence | Joanne Blake



Sessions are subject to change. For the most recent CE Program descriptions and sessions, visit egbc.ca/conference.

CONFERENCE PACKAGES

All prices are subject to GST. Early Bird Deadline: Monday, September 13, 2021.

ALL-ACCESS CONFERENCE PACKAGE <i>(Wednesday and Thursday)</i>	EARLY BIRD PRICING	REGULAR PRICING
<ul style="list-style-type: none"> • 8 live conference sessions, including 2 featured keynotes • Up to 34 CE hours: live presentations (8 CE hours), all the breakout sessions' recordings (24 CE hours), and 2 Keynote presentations (2 CE hours) • Live Q&As • Virtual exhibits • Networking lounge • Games and prizes • Unlimited on-demand access** 	\$250 *Student \$100	\$325 *Student \$100
WEDNESDAY CONFERENCE PACKAGE	EARLY BIRD PRICING	REGULAR PRICING
<ul style="list-style-type: none"> • 4 live conference sessions, including featured keynote • Up to 17 CE hours: live presentations (4 CE hours), all the breakout sessions' recordings (12 CE hours), and Keynote presentation (1 CE hour) • Live Q&As • Virtual exhibits • Networking lounge • Games and prizes • Unlimited on-demand access** 	\$175 *Student \$50	\$225 *Student \$50
THURSDAY CONFERENCE PACKAGE	EARLY BIRD PRICING	REGULAR PRICING
<ul style="list-style-type: none"> • 4 live conference sessions, including featured keynote • Up to 17 CE hours: live presentations (4 CE hours), all the breakout sessions' recordings (12 CE hours), and Keynote presentation (1 CE hour) • Live Q&As • Virtual exhibits • Networking lounge • Games and prizes • Unlimited on-demand access** 	\$175 *Student \$50	\$225 *Student \$50

**Student Price is only eligible for student enrolled in the Student Program of Engineers and Geoscientists BC.*

***All breakout sessions will be available on-demand up to 90 days after the conference unless otherwise specified.*

Keynote sessions will only be available on-demand for 30 days after the conference.

No refunds after Monday, October 4, 2021. A \$20 administration fee will apply to all cancellations received prior to this day.

For full cancellation policy, visit egbc.ca/conference.

GROUP DISCOUNTS

We are pleased to offer a group discount for three or more registrants from the same organization purchasing the same package.

The more attendees you have and the earlier you register, the more you save!

GROUP DISCOUNT	NUMBER OF PARTICIPANTS
10%	3-4 participants
15%	5-6 participants
20%	7-9 participants
25%	10-11 participants
30%	12 or more participants

Group discounts apply to all packages.

To learn more about group discounts, please contact conference@egbc.ca.

REGISTER

Register today at, egbc.ca/conference.

We look forward to seeing you at the 2021 Engineers and Geoscientists BC Annual Conference!

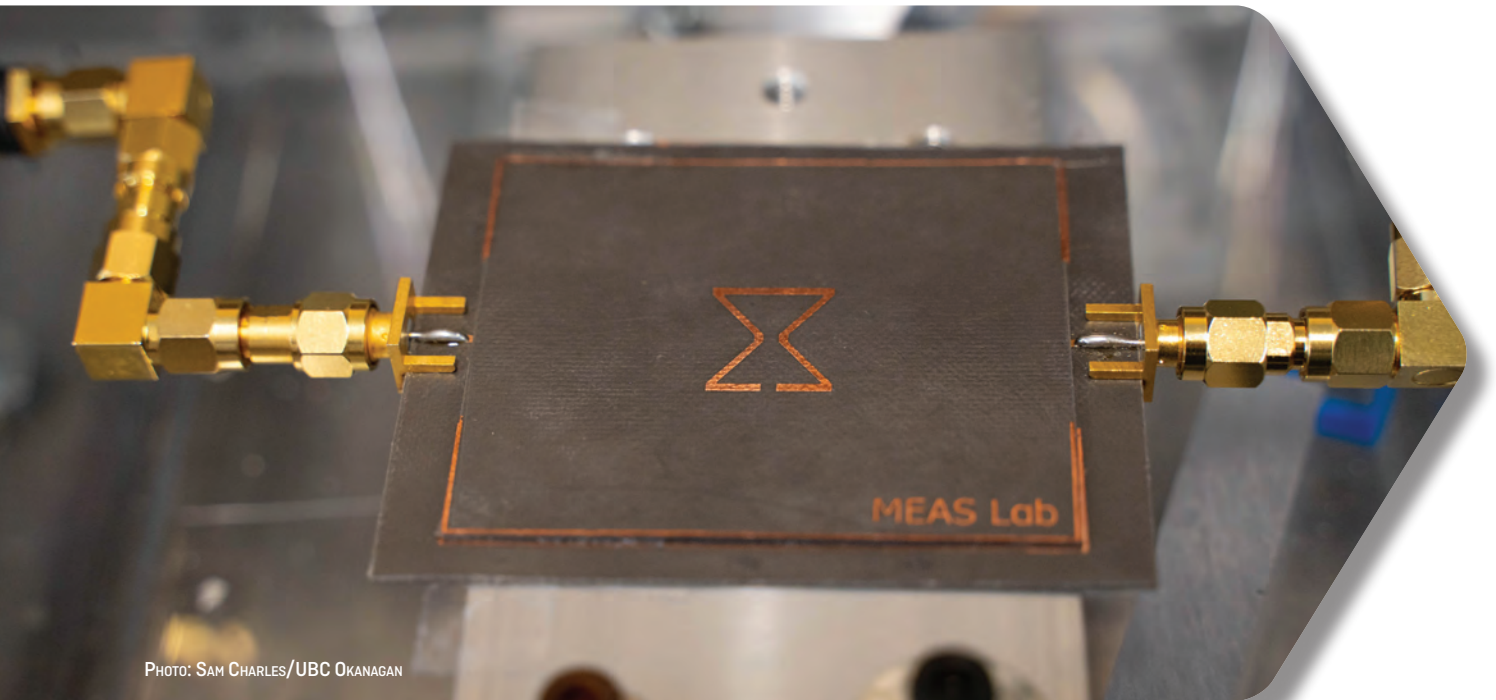


PHOTO: SAM CHARLES/UBC OKANAGAN



PHOTO: TRUBA7113/SHUTTERSTOCK.COM

ICING: AVIATION'S MOST DANGEROUS CONDITION

Even novice pilots know to avoid icing conditions at almost any cost. “Known icing conditions” is a term to indicate atmospheric conditions favourable to airframe icing—and can pose extreme danger to aircraft that haven’t be thoroughly tested for icing conditions, and aren’t outfitted with proper anti-icing equipment.

Scott Paterson is Department Head and Person Responsible for Training at BCIT Aerospace. “There is no good ice,” he said. “The best strategy is just to avoid it.”

Paterson indicated that ice can form on almost any airplane surface—such as

...CONTINUED FROM PAGE 23

Terrific stuff, but possible applications for the sensors go far beyond just airplane wings. In fact, they have major implications for the “ice community” as a whole: all of those industries and countries, like Canada and Russia, that have a significant interest in studying and managing cold weather hazards.

After lead writer Ryan Kozak, a master’s student in Zarifi’s OMEGA Lab, published a paper describing the latest version of the coated microwave sensors in December 2020, the team heard practically overnight not only from various segments of the aviation industry, but also from a Scandinavian drone manufacturer, and seven or eight wind farm companies. “Ice on wind turbines can be thrown off, which creates a hazard to people and cars, etc.,” said Zarifi. “But in addition to that, ice on the blades decreases their ability to generate power, so they are hoping that our sensors will help them increase their efficiency no matter what the weather—making that technology even greener.”

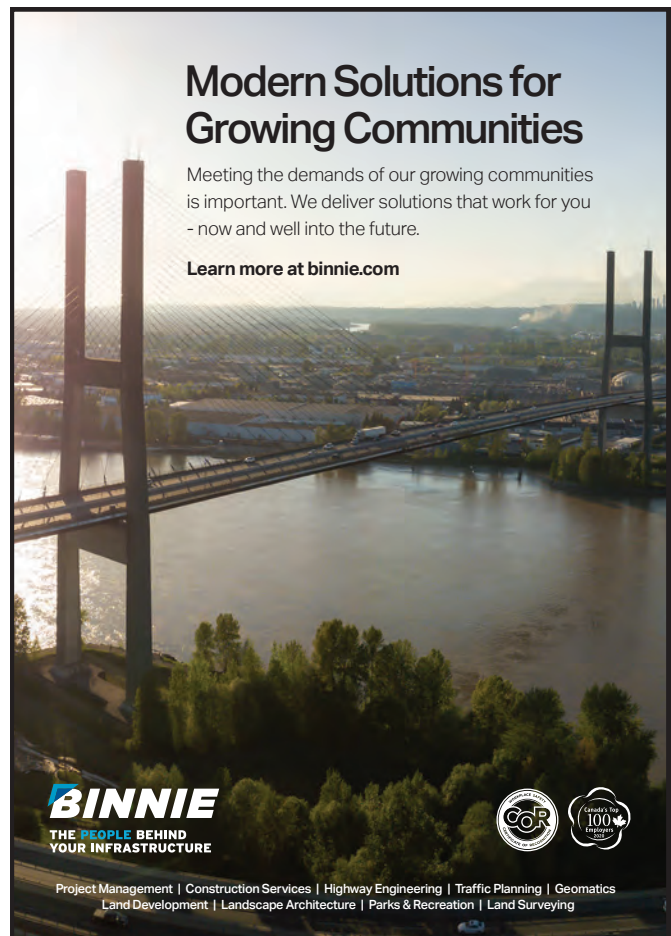
Over the next year or so, the coated microwave sensors will go through a series of rigorous tests at the National Research Council’s icing wind tunnels in Ottawa, as well as at wind farms in both Canada and the US, and on drones in Norway. In addition, a company called Tekmar Control Systems in Vernon, BC, which manufactures HVAC control systems, is interested in testing how the ice sensors might work in and around homes, including driveways and pathways. From there, it’s just a short step to their use by municipalities around the colder parts of the world to create safer roads and sidewalks.

“There hasn’t, I believe, been anything like this before,” said Zarifi. “The market is huge.” And it looks like there may be even more industry interest in the future. The OMEGA Lab’s latest innovation is a sensor that can sense salty ice, which freezes at colder temperatures than freshwater ice, and can cause major issues for deep sea oil rigs and a range of other marine industries. “We are incredibly excited.” ♦

pitot tubes and engine carburetors—but even small amounts of ice accumulating on a wing can impact its aerodynamic performance and substantially impair how the airplane flies.

“Ice is a bad thing on the wings because it changes the profile of the wing, so that it’s not as efficient,” he said. “Eventually that wing is going to stall and will no longer produce lift.”

Even more concerning is that even minor amounts of ice, gradually forming unnoticed on a wing, can “roughen” its surface and cause its aerodynamic performance to plummet; the pilot receives no warning, aside from stall warning systems that indicate an imminent loss of control. If a stall warning sounds, the pilot knows the aircraft isn’t flying as designed—but doesn’t know why.



Modern Solutions for Growing Communities

Meeting the demands of our growing communities is important. We deliver solutions that work for you - now and well into the future.

Learn more at binnie.com

BINNIE
THE PEOPLE BEHIND YOUR INFRASTRUCTURE

Project Management | Construction Services | Highway Engineering | Traffic Planning | Geomatics
Land Development | Landscape Architecture | Parks & Recreation | Land Surveying

COOR
Canada's Top 100 Employers

THE PLEASURES AND PAINS OF PREPARING DEPRECIATION REPORTS

Depreciation reports are a significant part of many BC engineering practices these days, but they can be difficult and time consuming, and not everyone is suited to the work. For those who are, however, depreciation reports can be stimulating, worthwhile, and good for business.

Robin J. Miller



Caveat emptor! Buyer beware! We hear it all the time, but not all of us heed it, even when it comes to what is probably the biggest purchase of our lives: a place to live. Many real estate purchases are made on gut instinct, often without a home

inspection or a careful review of essentials like roofs and plumbing, or—for condo buyers in BC—a thorough reading of the depreciation report. And that oversight can result in a surprise later, such as an unanticipated special assessment.

“With the conditions of the warranty structure that we have in BC now, plus the *Building Code* and the emphasis that’s been placed on much higher standards,” said Tony Gioventu,

executive director of the Condominium Homeowners Association of British Columbia, “most of the buildings that are constructed in this province are just superb. But things happen.” Every building, large or small, deteriorates over time, but that deterioration is predictable. Government-mandated depreciation reports for condominiums are, he said, “a very good vehicle for ensuring continuous monitoring of systems” and helping condo owners be aware of, and plan for, work that will need to be done in the future.

In this province, there are currently about 32,000 condo corporations (or stratas as they are called here), including residential, commercial and mixed-use stratas. As of 2011,



PHOTO: EB ADVENTURE PHOTOGRAPHY/SHUTTERSTOCK.COM

Workers set up scaffolding around a strata in Vancouver as they prepare to repair building envelope damage. Depreciation reports can often spot or anticipate required building upgrades or repairs, and assess the financial needs needed to complete them.

PHOTO: ERIC BUERMEYER/SHUTTERSTOCK.COM



any strata with five or more lots, or roughly 22,000 buildings today, is required under the provincial *Strata Property Act* and regulations to have a strata depreciation report, unless three-quarters of eligible owners vote against it. The report must be prepared by a “qualified person”—who could be a professional engineer or an architect, for example—and must be updated every three years (again, unless voted down by three-quarters of the owners).

There are two main parts to a depreciation report. The first is a technical assessment of the strata’s common property and

assets, including building structures and systems, as well as roofs, balconies, doors, and windows, amenities such as pools or gyms, and parking facilities and roadways. The second is a financial analysis of the costs to renew or repair those items. The financial analysis outlines projected maintenance, repair, and replacement costs over a 30-year span, and provides three funding models for the strata to consider for longer term repair and maintenance expenses. These models may include paying from the strata’s contingency reserve fund, paying by special assessment, covering the costs

through monthly strata fees, or obtaining a loan. Strata councils are required to make depreciation reports available to prospective condo buyers, and they are usually the only third-party information those prospective buyers will receive.

Said Gioventu, “about a third of stratas vote against having a depreciation report done. It’s the ostrich-head-in-the-sand thing: they don’t want to know, they don’t want to have to deal with it, or they don’t want to pay the money.” But it’s becoming clear that there are significant ramifications for saying no. “What’s happening now is that these stratas are finding they can’t renew their insurance, and that buyers can’t get mortgages, without a depreciation report. It’s starting to affect their ability to transact normal business.” And that means potentially even more work for engineers, as previous naysayers are convinced to join the many other strata corporations in BC currently searching for a firm to take on their reports. “There are not enough people around doing the work right now,” said Gioventu. “There is a good business opportunity here for engineers”—but only, say the two founding principals of North Vancouver-based Sense Engineering,



Your Vancouver Island based specialists for
Geotechnical and Environmental drilling services.

Dual Rotary

Cable Tool

Sonic

Auger

ODEX

Coring



Phone: (250) 746-5268
Toll Free: 1-(800) 746-7444
Email: drill@drillwell.com

Drilling 4" to 36" diameter holes across the province since 1965

www.drillwell.com



This sort of piping wear in a strata common area may not turn up in a home inspection, but a depreciation report may highlight systemic piping issues, and project repair dates and costs.

PHOTO: PORNPRAPA.C/SHUTTERSTOCK.COM

which focusses on restoration consulting, structural engineering, and capital planning, for those who fully understand what's involved.

"We enjoy doing depreciation reports," said Ted Denniston, leader of Sense Engineering's Capital Planning Team, which is responsible for drafting depreciation reports, "but they're not easy. First you go to the site for about four to six hours, and then you write a report for 20 to 40 hours. It's a lot of writing, it's a lot of research, it's the crunching of numbers. The other part is time spent with the stratas themselves. When we do restoration consulting and look at the roof, we just need to educate the client on their roof. But with a depreciation report, you're doing some form of education on every single component of the building and every single piece of equipment at the building. And, in some cases, you get pushback."

Strata corporations are run on a volunteer basis by owners from all walks of life, most with no experience in either capital planning or building construction. Incomes can vary widely, which means tolerance for higher maintenance fees or special levies may

be low, and owners may fight among themselves and with their consultants. "You have to have empathy for the owners and a lot of patience," said Denniston. In addition, said Brennan Vollerling, P.Eng., head of Sense Engineering's Restoration Team and one of two engineers responsible for reviewing the company's depreciation reports, "you have to really understand the work that you are giving opinions and costs on." To be completely accurate, which is what both strata councils and prospective buyers require to make the best decisions, "You have

to have a really good handle on what the market is for the type of repairs you are telling stratas they have to make. Because we do restoration work all the time, we know what window replacement really costs, for example."

Wes Narciso, P.Eng., senior engineer and manager of JRS Engineering's existing buildings division in Vancouver, uses that same window replacement example. "We are building envelope consultants," he said. "We're intimately aware of all the costs associated with replacing windows: the permitting costs, the project management costs, the design



Don't let **Unknown Utility Risks** slow down your project.

At T2ue, we specialize in managing and mitigating utility risk. We streamline construction and improve safety by providing quality utility information, insight, and deliverables. Contact us and see how we can help you avoid costly utility-related damage.

- Multi-Channel Ground Penetrating Radar
- Subsurface Utility Engineering
- Utility Coordination

T2ue.com | 855-222-T2UE





PHOTO: KARAWYSH/SHUTTERSTOCK.COM

costs, the contingencies for wood rot around the windows, the costs for the flashings, the paint, the sealant. You can't just take the cost of windows and multiply it by the number of windows in the building. The real cost is much higher. Compiling physical assets and correctly analysing the costs of repair or replacement is complicated. You have to have good financial training as well as building expertise."

Finally, said Vollering, you also need to know what you don't know, and be able to suggest that a strata bring in an expert in another area, such as a geotechnical or mechanical engineer, when necessary. "There aren't too many days that go by where I am not recommending that, hey, you know what, call this person, he's really good at this."

But if you are confident that you have the capability to prepare depreciation

reports, they can be good for business in other ways. "Property managers are a very crucial part of our clientele Rolodex," said Narciso, who was the first professional engineer in BC to be designated a Certified Reserve Planner by the Real Estate Institute of Canada to strengthen his depreciation report skills. "Telling them about our experience in preparing depreciation reports helps us inform property managers about all the other things we can do to help maintain and fix their buildings. It helps us demonstrate the value of engineers and our services to people who might not know exactly what it is we do. They see that we are attuned to how a building is put together and what goes into the costs of maintenance and renewal."

In the process of preparing depreciation reports, you may also help a strata avoid a potential life-safety issue. "If we see something immediately dangerous, like a rotted wooden balcony," said Vollering, "we warn the owners right away to stop using the balcony and we get some people out on site to open it up and assess the damage." The depreciation report will then take that information and lay out what's required to return the building to a safe state. ♦



SAVINGS FOR THE ROAD.

JOHNSON 

Proudly offering Engineers & Geoscientists British Columbia members Travel insurance solutions since 2009

Johnson Insurance is a tradename of Johnson Inc. ("JI"), a licensed insurance intermediary, and operates as Johnson Insurance Services in British Columbia and Johnson Inc. in Manitoba. Travel insurance products are underwritten by Royal & Sun Alliance Insurance Company of Canada ("RSA"). Valid provincial or territorial health plan coverage required. Travel Assistance provided by Global Excel Management Inc. The eligibility requirements, terms, conditions, limitations and exclusions which apply to the described coverage are as set out in the policy. Policy wordings prevail. JI and RSA share common ownership.

Engineers and Geoscientists BC's website contains information on the complaint, investigation, and discipline processes. You can contact us at 604.558.6647 or toll-free at 1.888.430.8035 ext. 6647, or by email at complaints@egbc.ca.

DISCIPLINARY NOTICE: CHANG-LUN (CHANG) CHU, P.ENG.

Engineers and Geoscientists BC issued a Citation (formerly known as a Notice of Inquiry) to Chang-Lun (Chang) Chu, P.Eng., on April 9, 2021, which alleged that he breached section 44 of the *Engineers and Geoscientists Act* by failing to provide the Audit and Practice Review Committee with the Practice Review Questionnaire. While the *Engineers and Geoscientists Act* was repealed and the *Professional Governance Act* came into force on February 5, 2021, the conduct in question took place prior to the repeal of the *Engineers and Geoscientists Act*. The completion of the Practice Review Questionnaire is a required part of a practice review, and was requested by Engineers and Geoscientists BC four times.

Instead of proceeding to a disciplinary hearing, Mr. Chu agreed to a Consent Order, dated June 30, 2021,

in which he admitted the allegations in the Citation. Through the Consent Order, Mr. Chu agreed to provide a completed Practice Review Questionnaire to the Engineers and Geoscientists BC Audit and Practice Review Committee by July 30, 2021. Mr. Chu also agreed to pay a fine of \$1,000, and pay \$1,500 towards Engineers and Geoscientists BC's legal and investigative costs.

If Mr. Chu fails to comply with any of the terms of the Consent Order, his registration with Engineers and Geoscientists BC will be suspended until he meets the terms of the Consent Order.

The full text of the Consent Order can be found in the Disciplinary Notices section of our website, at egbc.ca/Discipline-Notices.

DISCIPLINARY NOTICE: PETER HEIDEMA, CAMPBELL RIVER, BC

On November 26, 2020, Engineers and Geoscientists BC issued a Notice of Inquiry to Peter Heidema, alleging that he demonstrated unprofessional conduct and contravened Principles 1, 2, and 3 of the Engineers and Geoscientists BC's Code of Ethics in relation to his slope stability work on a residential property in Campbell River, BC.

The Notice of Inquiry alleged that Mr. Heidema did not have sufficient training or experience to qualify him to accept responsibility for the assignment in question. The Notice of Inquiry further alleged that a recommendation in a geotechnical report authored by Mr. Heidema was not consistent with practice requirements reflected in the *Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in British Columbia* (the Guidelines). Specifically, in his geotechnical report, Mr. Heidema recommended that the existing coniferous and deciduous trees on the slope could be removed, leaving a short stump and the existing root systems intact to increase the stability of the slope at the rear of

the residential property and decrease the likelihood of any surficial land slippages on the face of the slope.

In addition, Mr. Heidema's recommendation to remove the trees contradicted a prior geotechnical report for the property, which recommended the existing vegetation on the slope should be maintained as a measure to reduce landslide hazard.

The Notice of Inquiry also alleged that Mr. Heidema's geotechnical report was deficient and not consistent with the Guidelines as it failed to:

- define the scope of services requested;
- describe the terrain conditions, slope drainage conditions, soil slippage (surface and deep seated), and development history;
- provide an estimate on the risk of a landslide;
- provide an estimate of the associated residual risks if the recommendations are implemented;

CONTINUES ON PAGE 37...

PROFESSIONAL SERVICES



making sustainable communities a reality

SURREY | VANCOUVER | CALGARY
KELOWNA | EDMONTON | TORONTO | NANAIMO

www.aplinmartin.com

AVALARCHES | SNOW | WEATHER

- Avalanche risk assessment, hazard mapping, and planning
- Engineering protection: design and installation
- Snow loading & weather impact studies
- Avalanche safety programs: training, forecasting, and control

ALPINE SOLUTIONS
AVALANCHE SERVICES



t. 604-892-9101

w. avalancheservices.ca

Squamish, BC
Vancouver, BC
Canmore, AB



**Horizontal CNC Machine
capacity available.**

**24/7 capability,
500mm x 500mm table size.**

Phone: 604.278.2223 | E-mail: info@hanind.com
www.hanind.com



The Right Team for Your Project

Our diverse group of professionals share an enthusiasm for community infrastructure. From planning through to design and construction management, we create nimble teams to tackle the unique requirements of every project.

This integrated service offering gives you the experts you need, when you need them.

islengineering.com



EDMONTON | CALGARY | CANMORE | LETHBRIDGE | GRANDE PRAIRIE
LANGLEY | BURNABY | SQUAMISH | WEST KOOTENAY | WHITEHORSE
VANCOUVER ISLAND | EAST KOOTENAY | KAMLOOPS | SASKATOON

- ▶ Geotechnical Foundation Evaluation.
- ▶ Slope Hazard Assessment Studies.
- ▶ Infrastructure Projects (Dams & Tunnels).
- ▶ Surface & Underground Mining.
- ▶ Geo-Environmental.



GCI Geotech Consulting Inc
T: 1-604-346-5988
www.gciconsultingcorp.com



CERTIFIED PROFESSIONAL SERVICES
CIVIL | STRUCTURAL | MECHANICAL
GEOTECHNICAL | CODE CONSULTING

4300 N. Fraser Way
Burnaby, BC, V5J 5J8

604.500.8851 | 236.521.0126
projects@adeptengineering.ca



Consulting Engineers

Electrical Power Systems & Distribution Specialists

AM Power Systems has been providing world-class consulting engineering services in the areas of Analysis & Studies, Design, Generation, Transmission, Substations and Commissioning to clients in all sectors since 1994, including Oil & Gas, Pulp & Paper, Mining, Municipal, Commercial, Renewables, Co-Generation, Utilities, and ports.

Tel: 604-572-3725 Website: www.ampowersystems.com Email: amps@ampowersystems.com



AUTOMATION SOLUTIONS

Process control, instrumentation, electrical and power engineering /
Competency-based operator training simulations / High-fidelity
dynamic process simulators / Autonomous and remote plants

ENGINEERED SUCCESS

ANDRITZ Automation Ltd. / Canada / andritz.com / automation-sales@andritz.com



- Foundations & Excavations
- Slope Stability
- Geotechnical Hazards
- Pavement Assessment & Design

604-513-4190 • www.braungeo.com



DYNAMIC Professional Snow
Avalanche Expertise

Hazard mapping • Risk assessment • Engineering design • Protection structures
Avalanche safety plans • Worker training • Avalanche forecasting • Risk control



Revelstoke, Whistler, and Kimberley BC

250.837.4466

www.dynamicavalanche.com

Advertising in INNOVATION
Contact Monique Nguyen at Advertising In Print
Email: advertising@egbc.ca Phone: 604.681.1811

...CONTINUED FROM PAGE 35

- consider the potential impacts of a landslide; and
- address the limitations and qualifications of the assessment and report, assumptions, error limits and uncertainties.

Instead of proceeding to a disciplinary hearing, Mr. Heidema agreed to a Consent Order in which he admitted to the allegations in the Notice of Inquiry, and agreed that his registration is cancelled effective the date of the Consent Order. Mr. Heidema agreed that he would not

re-apply for registration for at least one year, and then only after he completes the Professional Practice Examination and the Professional Engineering and Geoscience in BC Online Seminar.

Mr. Heidema also agreed that, if his registration is reinstated, a peer-reviewer approved by Engineers and Geoscientists BC will review any geotechnical engineering he undertakes. Finally, Mr. Heidema agreed to pay \$4,000 toward the Engineers and Geoscientists BC legal costs.

If Mr. Heidema's registration is reinstated and he fails to comply with the peer review requirement, his registration will be suspended until he complies.

The full text of the Consent Order can be found in the Disciplinary Notices section of our website, at egbc.ca/Discipline-Notices.

AD INDEX JULY/AUGUST 2021 INNOVATION

Binnie Consulting.....	29
Drillwell	32
Foundex.....	12
Hoskin Scientific.....	6
Johnson	34
Mud Bay Drilling	5
Norton Rose Fulbright	23
Oyen Wiggs Green & Mutala	11
Park Insurance	2
SHK Law Corp (Clyde & Co)	14
St. Michaels University School	21
T2 Utility Engineers	33
Technical Safety BC.....	13
University of Victoria	7

PROFESSIONAL SERVICES



Tt TETRA TECH

Leading with Science®

Diversity and inclusion are among Tetra Tech's core values. We bring together engineers, scientists, and technical specialists from all backgrounds to solve our clients' most challenging problems.





Vancouver
Victoria
Nanaimo


Kelowna
Vernon
Fernie

Terrace
Revelstoke



tetrattech.com/canada

WWW.KLOHN.COM    



Klohn Crippen Berger has a long history of participation in some of the largest and most challenging engineering projects in the world. We are proud of our legacy and will continue to build a better world through excellence, innovation and teamwork.

northwest hydraulic consultants
Innovative Water Solutions

Vancouver | Nanaimo | Kamloops

nhcweb.com



PITEAU ASSOCIATES
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

ROCK MECHANICS • OPEN PIT SLOPES • WASTE ROCK DUMPS • ENGINEERING GEOLOGY • MINE CLOSURE
WATER MANAGEMENT • MINE DEWATERING • ENVIRONMENTAL GEOCHEMISTRY • CONTAMINATED SITES

Tel: (604) 986-8551 / Fax: (604) 985-7286 / Website: www.piteau.com

VANCOUVER - KELOWNA - RENO - ELKO - DENVER - TUCSON - SANTIAGO - LIMA - SHREWSBURY - JOHANNESBURG



THURBER ENGINEERING LTD.

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

thurber.ca



Professional Engineers - Land Development Consultants



STEEP ROCKY TERRAIN SPECIALISTS

Tel: (604) 983-0458
Fax: (604) 983-0459
www.webstereng.net

3745 Delbrook Ave.
North Vancouver, B.C.
Canada V7N 3Z4



KERR WOOD LEIDAL
consulting engineers

Engineering a Balance
between People
and the Environment

Greater Vancouver • Okanagan • Vancouver Island
Calgary • Kootenays



kwl.ca

Engineers and Geoscientists BC announces with regret the passing of the following registrants.

Mr. Ian James Dominic Dowdeswell, P.Eng.
(Non-Practising)

Mr. Boris Dziubenko, P.Eng.
(Non-Practising)

Mr. John Victor Eby, P.Eng.
(Retired)

Mr. John Barton Fairbairn, P.Eng.
(Non-Practising)

Mr. Malcolm Ben Ferman, P.Eng.
Mr. Robert Donald Ferris, P.Eng.
(Non-Practising)

Mr. Herbert Bernard Goldman, P.Eng.
(Retired)

Dr. John Ross Grace, P.Eng.
(Non-Practising)

Mr. Alton Joseph Green, P.Eng.
(Non-Practising)

Mr. George Edward Gunn, P.Eng.

Mr. Edwin Michael Gyde Heaven, P.Eng.

Mr. Stuart Hooper Hicks, P.Eng.
(Non-Practising)

Mr. Peter Lam, P.Eng.
(Non-Practising)

Mr. Ronald David Lane, P.Eng.

Mr. Mark Alexander MacConnell, P.Eng.

Mr. Philip John MacIntyre, P.Eng.
(Retired)

Mr. Sebamalai Loyolla Mannavarayan, P.Eng.
(Non-Practising)

Mr. Paul David Michalko, P.Eng.

Mr. Neil James Morison, P.Eng.
(Retired)

Ms. Ursula Grace Mowat, P.Geo.

Mr. Rex Pegg, P.Eng.
(Retired)

Mr. Richard Gilbert Scarisbrick, P.Eng.

Mr. Ian Smith, P.Eng.

Mr. William Gordon Timmins, P.Eng.
(Non-Practising)

Mr. William Anthony Triggs, P.Eng. ♦

CONTINUING PROFESSIONAL DEVELOPMENT

PERSONAL INVESTMENT. PROFESSIONAL COMMITMENT.

UPCOMING WEBINARS

ISO STANDARDS ON ADAPTATION TO CLIMATE CHANGE: PART 3

August 17, 2021

Engineers and Geoscientists BC has engaged the conveners of the recently published ISO 14090 and ISO 14091 Standards on Adaptation to climate change to provide a 3-part series of continuing education offerings on the newly released standard. The ISO 14090 Standard describes a system for managing the full life cycle of adaptation to climate change and the ISO 14091 Standard provides a deeper dive into risk assessment considerations.

INDEPENDENT REVIEW OF STRUCTURAL DESIGNS

August 25, 2021

What is considered a structural design? Is independent review the same as documented checking? What is the difference between a Type 1 and a Type 2 review? This session will summarize the independent review requirements for all registrants who are involved in structural designs and clarify the difference between checking and the requirement to conduct a documented independent review.

AUTHENTICATION OF DOCUMENTS (FORMERLY "USE OF SEAL")

September 22, 2021

This session will provide an overview of the purpose of a seal, which documents require sealing, who is permitted to seal, and how to apply a seal. This session will also discuss the difference between digitally and manually authenticated documents as well as appropriate ways to manage, protect, and deliver each.

HYDRAULIC MODELING OF SANITARY SEWER COLLECTION SYSTEMS

September 22, 2021

Do not waste another dollar on hydraulic modeling until you attend GeoAdvice innovative training session: "Hydraulic Modeling of Sanitary Sewer Collection Systems". The sanitary sewer modeling training begins with the basics of hydraulic theory as it applies to sewer collection modeling, and then takes participants through the sanitary sewer

data model. Both steady-state and extended-period simulations will be presented in this course.

Sewer load allocation and model calibration will be discussed. Participants will become familiar with EPA-SWMM (transport compartment only) and use the software to reinforce concepts with the workshop problems.

PHYSICAL MODELLING FOR HYDRAULICS, HYDROLOGY AND COASTAL PROJECT

September 30–October 1, 2021

The course offers engineering fundamentals of physical modeling for hydraulics, hydrology and coastal projects with the following objectives: to get familiar with the applied theories of scale modeling for hydrotechnical projects (river, coastal, hydraulic structures, and hydromechanics), to determine when scale modeling should be performed compared to field, analytical, and numerical methods, to interpret the results of physical modeling, and to avoid common pitfalls in physical modeling of hydrotechnical phenomena involving interaction of water with sediment and/or structures.

BUSINESS DEVELOPMENT AND SALES SKILLS FOR ENGINEERS AND GEOSCIENTISTS

October 1–December 31, 2021

This program provides registrants with the skills and confidence to effectively address issues relating to sales and business development. Course topics include: presenting your firm's value proposition, discovering your client's requirements, conducting professional sales presentations, and securing commitment while selling. Participants receive 3 months of access to the myKISON eLearning program along with monthly 90-minute webinars facilitated by program creator Ralph Kison. The webinars include case studies, role plays, and peer discussions so participants can apply the content to their own situations.

DOCUMENTED FIELD REVIEWS DURING IMPLEMENTATION AND CONSTRUCTION

October 20, 2021

What is a field review? Are all Registrants required to carry out field reviews? This session will explore the requirement for the professional of record to

conduct field reviews, or to have them conducted under their direct supervision.

ADVANCED MODELLING AND WATER MASTER PLANNING

November 16, 2021

Participants will be introduced to advanced topics like Extended Period Simulations, Water Quality Modelling, Demand Allocation, Model Calibration, and Planning System Improvements. To reinforce concepts learned during the course, participants will engage in hands-on EPANET tutorials for each section of the training.

WEBINAR RECORDINGS

DEVELOPING A PROFESSIONAL PRACTICE MANAGEMENT PLAN FOR SOLE PRACTITIONERS

This presentation will briefly review the requirements of registering for a Permit to Practice, focus primarily on developing a Professional Practice Management Plan specific to sole practitioners using templates available, and address key questions heard from sole practitioners about the regulation.

ENGINEERS AND GEOSCIENTISTS BC'S CLIMATE CHANGE ACTION PLAN

The Climate Change Action Plan will provide a framework for how Engineers and Geoscientists BC can better support its registrants in their professional practice and allow the association to respond to climate change issues proactively rather than reactively. The purpose of this webinar is to raise awareness about the potential impacts of the changing climate as they relate to professional practice, and to raise awareness on Engineers and Geoscientists BC's existing tools, resources, and guidelines on climate change.

LAND ACKNOWLEDGEMENTS FOR ENGINEERS AND GEOSCIENTISTS

Explore the practice of acknowledging First Peoples and traditional land as a way to open meetings but also as part of a larger process towards reconciliation between non-Indigenous and Indigenous Peoples in Canada, with a panel of Indigenous engineers and geoscientists.

We encourage you to take advantage of the Online Learning Centre, at egbc.ca/Online-Learning, which provides remote educational opportunities. The Centre now hosts more than 50 online learning opportunities on a variety of topics.

For a complete listing of online learning opportunities, or for more information, visit egbc.ca/Online-Offerings, or contact us at 604.430.8035 or 1.888.430.8035.

CALL FOR PRESENTERS

Are you an expert in your field who would like to contribute to engineering and geoscience practice? Engineers and Geoscientists BC is actively seeking members to present on a variety of topics. For more information, please visit egbc.ca/Practice-Resources/Professional-development.



ENGINEERS &
GEOSCIENTISTS
BRITISH COLUMBIA



ENGINEERS &
GEOSCIENTISTS
BRITISH COLUMBIA

REMINDER: ANNUAL REPORTING IS PAST DUE

Under the *Professional Governance Act*, all registrants must verify certain practice-related and contact information annually. This four-step process is **mandatory for all registrants** and only takes a few minutes to complete.

The deadline has now passed. Complete your annual information reporting today to maintain your registration with Engineers and Geoscientists BC.

Registrants who do not complete this requirement by **September 30, 2021** will be suspended.

Update your information today at
egbc.ca/annual-reporting

ENGINEERS AND GEOSCIENTISTS BRITISH COLUMBIA

200 • 4010 Regent Street, Burnaby, British Columbia V5C 6N2 TEL: 604.430.8035 / 1.888.430.8035 EMAIL: info@egbc.ca WEBSITE: egbc.ca