

JUNE 2026

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Advanced Technologies  
to Address Climate  
Change Challenges;  
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# THE VOICE

OF ONTARIO'S ENGINEERS

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Dear OSPE Members,

As your new chair, I am excited to address you in this space and represent OSPE over the year to come.

You have probably read that recently; **Professional Engineers Ontario (PEO)** announced a reduction in the number of years of experience required to earn a license. That was the headline, but in actuality it won't really be a reduction, at least not for most engineers as they will still have to demonstrate the 34 competencies required for licensure, a benchmark that can be hard to achieve in a short period of time for most.

The engineering community needs more engineers and for those that have demonstrated the competencies that are determined by our provincial regulatory body, is there any reason not to give them the opportunity to practice?

Whenever there are changes like this, it forces us all to consider what the license means and what it represents. I actually approach this from the perspective of an engineer who is licensed, yet whose livelihood does not require it. So why do I do it? Why do I pay annual fees even though I currently don't, and might never, have a job that requires me to be a licensed professional engineer?

As a point of context, about two thirds of OSPE's paid membership hold a P.Eng. Anecdotally, we know that most of them do need a license to perform their duties, but more and more, the value of the license is being threatened, less by changing requirements and more by groups seeking to claim work that is legally protected for engineers under the **Professional Engineers Act**.

When this happens OSPE responds, alerting members and the engineering community about the threat and more importantly, engaging government and other stakeholders about the risk. That kind of action is what OSPE can do better than any other member of the engineering community, it is often what separates us from other concerned parties.

At the same time, I do think it is worth it to consistently look at a license beyond the absolute technical requirements because while the license might mean a stamp, or a code of ethics to many, it should mean more to us engineers, and we need the community beyond to appreciate that.

It should mean...

- A focus on problem solving not just meeting minimum standards

- An ability to balance the needs of now with the needs of tomorrow
- Considering the needs of the many over what benefits the few

If a P.Eng. only means permission to practice and meeting minimum standards, then we shouldn't be surprised when the market does not value it the way we want it to. But if we make it mean that much and more, then we can continue to thrive in our evolving communities and economy. That is the skill set we provide.

Getting back to why I maintain my license, even though I do not need to as an entrepreneur. To me it is as much about how I define myself, as it is about the work I do. I want everyone to know I am an engineer, it's part of my training, my experience and how I look at the world, no matter what role I am in currently, or in the future. We all need to work together to reestablish the value of engineering.

That is something I believe in and that OSPE is committed to.

Regards,



**Nicholas Burgwin, P.Eng.**  
OSPE Chair  
Ontario Society of Professional Engineers

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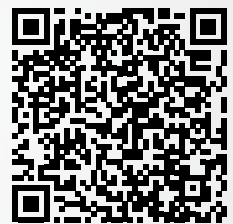


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## News from the Front

From February to April, OSPE engaged with key provincial government decision-makers on the issues that matter to engineers. With meetings across ministries, OSPE advocated for protecting engineers' right to practice, building an affordable energy transition, modernizing the **Professional Engineers Act**, protecting interprovincial trade, and more. There were also significant policy wins for Ontario's engineers at every level of government.

### Meeting with Minister Stephen Crawford – February 17

OSPE staff met with **Minister Stephen Crawford**, from the **Ministry of Public and Business Service Delivery and Procurement**, to discuss **Bill 72, Buy Ontario Act**. OSPE emphasized the need for qualifications-based selection in procurement to ensure the long-term value of projects.

### OSPE's Annual Lobby Day and Queen's Park Reception – March 23

OSPE hosted its annual **Lobby Day** and **Queen's Park Reception** on March 23. Meetings with decision makers included discussions on modernizing the **Professional Engineers Act**, building affordable, sustainable and resilient cities, strengthening research, innovation, and industrial growth, building a more inclusive engineering profession, and enabling the energy transition.

### The Ontario Chamber of Commerce's Ontario Business Advisory Council Roundtable – April 2

OSPE attended the **Ontario Business Advisory Council Roundtable** with the **Hon. Andrea Khanjin, Minister of Red Tape Reduction**, and the **Hon. David Piccini, Minister of Labour, Immigration, Training and Skills Development**. OSPE provided insights from Ontario's engineering community on key issues, like permitting and coordination challenges, workforce flexibility, housing affordability pressures, labour mobility, and workforce safety.

### Meeting with Minister of Energy and Mines, Stephen Lecce – April 2

Members of OSPE's **Energy Task Force** met with the **Hon. Stephen Lecce, Minister of Energy and Mines**, to advocate for engineering solutions for Ontario's energy system.

### Meeting the Ontario Legislature Internship Programme Participants – April 10

OSPE's advocacy team met with the 2025/2026 interns from the **Ontario Legislature Internship Programme (OLIP)**. OSPE staff and the interns had a meaningful discussion about ensuring that engineers have a voice



Minister Stephen Crawford meeting with OSPE's CEO Sandro Perruzza, Director of Public Affairs Paola Cetares, and Public Relations Coordinator Lydia Batty.



Paola Cetares, OSPE Director of Public Affairs, at the Ontario Business Advisory Council Roundtable with the Hon. David Piccini, Minister of Labour, Immigration, Training and Skills Development.

at the policy table, and why it's so important that public policy is informed by strong technical expertise and evidence.

**Meeting with MPP Tom Rakocevic – April 30**

OSPE staff and the **Sustainable Cities Task Force Chair, Carl Bodimeade, P.Eng.**, met with **MPP Tom Rakocevic, Shadow Minister for Public and Business Service Delivery and Procurement** to emphasize the need for [qualifications-based selection](#) in procurement to ensure the long-term value of projects.

**Policy Wins**

**2026 Provincial Budget: A Plan to Protect Ontario – March 27**

**Ontario's 2026 Budget, A Plan to Protect Ontario**, includes over \$210 billion in long-term infrastructure investments aimed at housing, transit, and community development. The commitments made by the **Government of Ontario** align closely with engineering priorities. [Learn more here.](#)

**The Canada–Ontario Partnership to Build – March 30**

**Premier Doug Ford** and **Prime Minister Mark Carney** signed **The Canada–Ontario Partnership to Build**. This new agreement is a joint federal–provincial partnership designed to accelerate the delivery of major infrastructure, especially projects that enable housing development. The agreement addresses several advocacy priorities of Ontario's engineers. [Learn more here.](#)

**Toronto Transit Commission (TTC) to Improve Transit Speed Performance – April 16**

In February 2026, OSPE sent a letter to the CEOs of **Metrolinx** and the **TTC** flagging that [Toronto's surface rail network is underperforming](#). OSPE offered six operational principles to address these gaps, and just two months later, the TTC tabled a board report titled [Improving LRT and Streetcar Speed and Reliability](#) that reflects similar recommendations.

**City of Toronto Adopting Qualifications-Based Selection for Design Services – April 16**

On April 16 **The City of Toronto's Executive Committee** adopted [Qualifications-Based Selection \(QBS\)](#) as its evaluation framework for design services. OSPE has been advocating for QBS since 2021, arguing it improves public safety, delivers better long-term value, and ensures fair compensation for engineers.

**Letters and Submissions**

**Bill 98 Submission to the Standing Committee on Heritage, Infrastructure, and Cultural Policy – April 15**

[Read the full submission here.](#)

## Be Part of the Conversation!

ospe.on.ca

Joining an OSPE task force or working group allows you to connect with highly driven, accomplished, and experienced individuals, while providing a platform to discuss key issues with subject matter experts.

If you have valuable insights to share and are passionate about advocacy, we encourage you to get involved.

Contact [advocacy@ospe.on.ca](mailto:advocacy@ospe.on.ca)







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# 2026 MPP Lobby Day and Queen's Park Reception Recap

On the House's first sitting day of 2026, OSPE hosted its annual MPP Lobby Day and Queen's Park Reception.

Over the course of the day, OSPE staff and volunteers had nine meetings with ministers, parliamentary assistants, and critics. OSPE met with:

- Associate Minister Sam Oosterhoff, Energy-Intensive Industries, Ministry of Energy and Mines
- Associate Minister Charmaine Williams, Women's Social and Economic Opportunity, Ministry of Children, Community and Social Services
- MPP Rudy Cuzzetto, Parliamentary Assistant, Ministry of Energy and Mines
- MPP Monice Ciriello, Parliamentary Assistant, Ministry of the Attorney General
- Minister Todd McCarthy, Ministry of Environment, Conservation, and Parks and acting Minister of Infrastructure
- MPP Marit Stiles, Critic, Intergovernmental Affairs, Leader of the Official Opposition, Leader of the New Democratic Party of Ontario
- MPP Catherine Fife, Leader of the Official Opposition and Critic, Economic Development, Job Creation and Trade
- MPP Jennifer French, Critic, Infrastructure and Transportation
- Minister Rob Flack, Ministry of Municipal Affairs and Housing
- MPP Rob Cerjanec, Liberal Critic, Economic Development and Innovation.

Meetings focused on advancing the priorities impacting Ontario's engineers with policymakers. OSPE's recommendations focused on modernizing the **Professional Engineers Act**, building affordable, sustainable cities, strengthening research, innovation, and industrial growth, building a more inclusive engineering profession, advancing qualifications-

based selection for procurement, protecting practice rights, and enabling the energy transition.

In the evening, OSPE hosted members of the legislature, their staff, industry leaders, and engineering professionals working together to build Ontario's future to an evening reception. Greetings delivered from all four parties emphasized the crucial role engineers play in the safety and prosperity of our province.

As the parliamentary session continues, OSPE will continue to advocate for evidence-based policy, engineering expertise, and strong partnerships with decision-makers.



Dave Carnegie, P.Eng., MPP Andrew Dowie, Parliamentary Assistant, Ministry of the Environment, Conservation and Parks, MPP Ted Hsu, Sandro Perruzza, and MPP Jennifer French, Shadow Minister of Infrastructure and Transportation.



Paola Cetares, MPP Marit Stiles, Leader of the Official Opposition and MPP Catherine Fife, Shadow Minister of Economic Development, Job Creation and Trade.



Lydia Batty, Paola Cetares, Hon. Charmaine Williams, Associate Minister of Women's Social and Economic Opportunity.



Sandro Perruzza, Emily Pepper P.Eng, Hon. Rob Flack Minister of Municipal Affairs and Housing, Dave Carnegie P.Eng.



Sandro Perruzza, Hon. Todd McCarthy, Minister of Environment, Conservation, and Parks, and Carl Bodimeade, P.Eng.



Sandro Perruzza and Michael Wiggin with the Hon. Sam Oosterhoff, Associate Minister of Energy Intensive Industries.



OSPE CEO Sandro Perruzza speaking at OSPE's 2026 Lobby Day Reception at Queen's Park.

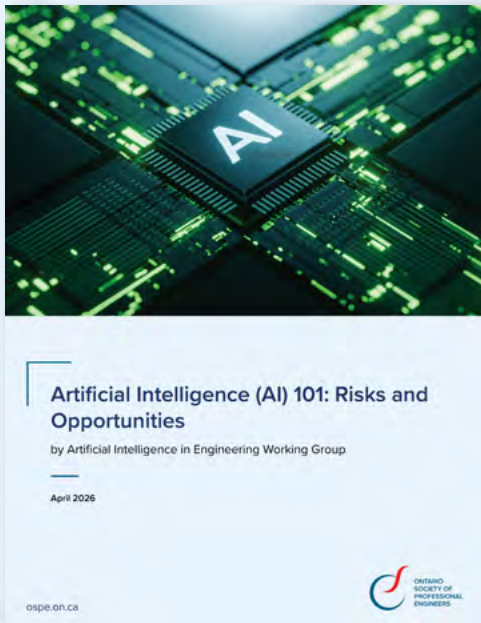


**New!**

## Artificial Intelligence (AI) 101: What You Need to Know

The Ontario Society of Professional Engineers (OSPE) Artificial Intelligence (AI) in Engineering Working Group developed the AI 101 Guide as a starting point for understanding AI and asking informed questions about its use. Drawing on member expertise and open-source resources, the guide comes at a time when engineers are being called on to deliver infrastructure at unprecedented speed, with AI playing a key role. With growing federal investment in sovereign AI, it is important for Ontario engineers to build the skills needed to apply these technologies effectively. This guide provides an overview of key concepts, applications, and real-world examples, and serves as a foundation for future work on AI in engineering practice.

[Download Report](#)



**New!**

## Artificial Intelligence (AI) 101: Risks and Opportunities

AI 101: Part 2 builds on Part 1 by moving from defining AI to explaining how it is used and managed in engineering practice. It is designed to help engineers transition from conceptual understanding to operational readiness by providing tools to evaluate AI systems, identify risks, and apply appropriate governance. This report highlights opportunities for AI to improve design and efficiency, while also addressing key risks such as bias, data sovereignty, and the need for human oversight. It also outlines emerging voluntary standards and includes practical risk scenarios to show real-world application. Overall, it aims to ensure Ontario engineers are prepared to use AI responsibly and effectively.

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# PEO Reduces Minimum Engineering Experience Requirement Under Competency-Based Assessment Model

## What Has Changed

Effective July 1, 2026, **Professional Engineers Ontario (PEO)** is changing the minimum engineering experience required for professional licensure in Ontario from four years to two years.

Though two years of engineering experience does not automatically qualify an applicant for a license. Applicants still must provide evidence of their experience and have their competencies assessed through PEO's established review process, including validation by licensed professional engineers. Demonstrated competence remains the standard for licensure.

While some applicants may be able to demonstrate all required competencies after two years of experience, others may require additional time. The change removes a barrier for individuals who can demonstrate readiness for professional practice earlier in their careers.

## Why OSPE Supports the New Minimum Two-Year Requirement

PEO's approach maintains rigorous standards by recognizing competence rather than years of experience.

OSPE supports the reduction in years since high professional standards are still being met. The CBA process requires applicants to demonstrate achievement across multiple competencies, with submissions reviewed by validators and assessors, one of whom must be a licensed P.Eng. The rigorous CBA requirements and review from professional engineers ensures that the reduced amount of time required in professional practice does not negatively impact public safety

OSPE also supports regulatory harmonization across provinces. The reduction in required years of professional practice aligns Ontario's licensure requirements more closely with those of several other Canadian jurisdictions. Greater consistency across provinces helps reduce incentives for jurisdiction shopping and supports a more harmonized national approach to engineering regulation.

For **International Engineering Graduates (IEGs)**, the change may also help reduce barriers to entering the profession. Highly qualified applicants who can demonstrate the required competencies may be able to obtain licensure sooner, allowing them to contribute their skills to Ontario's workforce more quickly.

## Going Forward

As an organization that advocates for reducing unnecessary barriers while maintaining high professional standards, OSPE welcomes measures that support qualified engineers in achieving licensure while continuing to protect the public interest.

Applicants are encouraged to review the latest information directly from PEO as implementation approaches and additional guidance becomes available: [Apply | Professional Engineers Ontario](#)



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# Opinion: An Engineers Insight into Conservation Authorities and Bill 68

Ferdous Ahmed, Ph.D., P.Eng., Senior Water Resources Engineer for Water's Edge

In early November 2025, the **Government of Ontario** introduced [Bill 68 \(Plan to Protect Ontario Act\)](#) which among other things includes a proposal to change the **Conservation Authorities Act**. It proposes to significantly amend the **Conservation Authorities Act**, to establish the **Ontario Provincial Conservation Agency (OPCA)**, and to amalgamate the existing 36 **Conservation Authorities (CAs)** into seven **Regional Conservation Authorities (RCAs)**. The OPCA's stated objective is to oversee conservation authorities and the transition to a regional watershed-based framework for conservation authorities in Ontario.

The [proposed CA consolidation](#) has been posted on the **Environmental Registry of Ontario** for public feedback. The 45-day comment period expired on December 22, 2025. It is noted that the **ERO 025-1257** is titled, **Proposed boundaries for the regional consolidation of Ontario's conservation authorities** and seeks feedback on only the proposed boundaries and the criteria for the regional consolidation of Ontario's 36 CAs. It does not seek feedback on the entire Schedule 3 of Bill 68 related to CAs.

The four main components of Bill 68 are as follows. (1) To establish the Ontario Provincial Conservation Agency, with its objectives being to oversee conservation authorities and the transition to a regional watershed-based framework for conservation authorities in Ontario. (2) Where the Minister considers it to be in the public interest to do so, the Minister may issue directions to the Agency. The Agency may issue directions to one or more conservation authorities but must first provide the Minister with a copy of the proposed direction, allowing the Minister the opportunity to take specified actions. (3) The Agency is authorized to establish and require the payment of fees and to take steps to recover its costs and expenses. (4) Other provisions include limitations on personal liability for specified persons and the barring of specified proceedings. Regulation-making authorities for both the Lieutenant Governor in Council and the Minister are also added to the Act.

The Conservation Authorities Act was originally enacted in 1946 to provide a means by which the province and the municipalities of Ontario could form a Conservation Authority – based on watershed boundaries to undertake programs for natural resource management. Three fundamental principles formed the basis of this initiative: local initiative, cost sharing, and watershed jurisdiction. In all likelihood, Bill 68 would significantly change the first two principles (which are based on policy) but would not change the third (as it is a scientific requirement).

Local initiative was originally envisaged as the desire of the local population to form a CA and a willingness to financially support its operation. It was a grassroots approach, allowing locals to deal with local problems. Bill 68 is proposing a top-down, centralized system where the Minister will be in control. Under the Minister's direction, the OPCA will provide centralized leadership, efficient governance, strategic direction and oversight of all conservation authorities. "The Agency shall comply with every direction of the Minister" (Section 35.16 of Bill 68) and "An authority shall comply with every direction of the Agency" (Section 35.21). It is clear that all CAs would ultimately be required to operate according to the Minister's direction, thus essentially becoming a wing of the provincial government. The future role of CA Boards and constituent municipalities has not been spelled out, nor has anything been said about the future of **MECP's Conservation and Source Protection Branch** (which now manages CA affairs) or **Conservation Ontario** (which is an umbrella organization of all CAs).

During the early years, Ontario used to provide at least 50% of all CA funding, even 75% in some cases. It has already dwindled from 50% to 5% over the last 30 years. Bill 68 does not explicitly say anything about provincial funding in the future, but indicates that monetary levies would be imposed on the CAs to run the OPCA (Section 35.26 of Bill 68).

The province promises to maintain watershed-based jurisdictions for effective flood and water management. This is consistent with the original intent of the Conservation Authorities Act.

The Ontario government has cited the following reasons for the proposed change. They are to “improve the conservation authority (CA) system to free up resources for front-line service delivery to help protect communities and better align the work of CAs with provincial priorities.” Here the operative word is provincial priorities, which have certainly changed during recent years. Whether more resources are freed up for front-line service can be known only after decades.

A [news release by the Government of Ontario](#) on October 31, 2025, states: “Ontario currently has a fragmented system of 36 conservation authorities, each of which have different policies, standards, fees and levels of staffing and technical capabilities. This has led to unpredictable and inconsistent turnaround times for approvals across all conservation authorities, creating uncertainty and delays for builders, landowners and farmers seeking permits and undermining conservation authorities’ ability to protect communities from floods and natural hazards.”

The Minister has been quoted as saying “Conservation authorities play a vital role in protecting our communities and managing our watersheds, but the system has become too fragmented, inconsistent and outdated. ... The new, dedicated agency would work with conservation leaders to ensure faster, more transparent permitting and more front-line services so we can reduce delays to get shovels in the ground sooner, support economic growth and keep our communities safe from floods and other natural hazards.”

This is a gravely negative assessment of CAs’ performance – serious enough that one would expect it to be accompanied by supporting data or analysis. However, no such data or analysis was provided.

The CAs conduct their business according to provincial rules, regulations and direction. So, any performance issues could be addressed within the current framework if the province so desires. The perceived failures of CAs essentially reflect an apparent failure of the province to manage agencies under its control.

The ERO posting says that the “proposed improvements to the conservation authority system would reduce duplicative administrative costs, free-up resources for frontline conservation, and *better align conservation authorities’ services*

*with provincial priorities on housing, the economy, infrastructure and climate resilience.”* It appears that this alignment is the main reason behind Bill 68, although where it is misaligned has not been clearly explained. Online discussions suggest a vast majority of people suspect that Bill 68 is being driven by special interests, especially land developers, although no concrete proof has been produced.

The ERO posting also states that “the regional conservation authorities would continue to focus on managing natural hazards and watershed health, drawing on decades of local knowledge and partnerships. With better tools and more resources for front-line staff, the regional conservation authorities would operate with greater consistency and transparency, deliver faster services to municipalities and permit applicants, while ensuring decisions continue to be based on sound science.”

Only time can tell how things will unfold. However, I think RCAs will be hard-pressed to handle permits any faster. But, for all parties (CAs, RCAs, the province and municipalities), there is and will be ample opportunity for greater consistency, transparency and efficiency. Repeated references to frontline staff and frontline services suggest the shrinking of decision-making and executive powers of CA managers.

Whether greater consistency is desirable, possible or even achievable is up for debate. CAs have widely different physical settings, needs and resources. Their operational needs will always be local. Therefore, greater consistency across all CAs may not always be logically desirable or practically achievable. However, policy and administrative matters may be made more consistent, transparent and cost-effective.

Twenty years ago, the ‘corporate service’ of a typical CA consisted of the General Manager and an Accountant. Now, there is a team consisting of the General Manager, Corporate Manager, Finance Manager, Human Resources Specialist, Executive Assistant, and two or three Accounting Clerks – altogether 7 to 8 persons instead of two in an organization of 50 to 60 staff. This would amount to about 35 ‘corporate service’ personnel within the jurisdiction of a typical RCA comprising of 5 CAs and with a combined budget of about \$40 million. The question is whether 35 people are needed to run a \$40 million operation. The same with communication staff. A typical CA has 2 to 5 such staff; they are often busy churning out superficial information nobody

requested and recurring self-promotion. Any savings in these and similar areas can be allocated to front-line services – the key goal of the province and presumably of the CAs.

Regarding transparency, many CAs hire staff via several channels such as open public competition, internal competition, internal selection without competition, on an ad hoc basis, etc. Although these are within the broad discretion of the management, they compromise merit-based hiring and tarnish transparency, which are normally expected of any taxpayer-funded agency. Sometimes CAs hire uncertified professionals (such as planners or hydrogeologists without professional registration), who are often challenged by outside consultants and in legal settings. Another common practice is sole sourcing of large contracts, which also stain transparency and reputation.

Floodplain mapping is an example where both consistency and transparency are lacking. Some CAs are open about the mapping process and their supporting technical analyses; they show everything to the public during public consultation and thereafter on their website. Some CAs show only the maps, but not the technical reports, thus effectively denying the public of the whole picture. Here is an opportunity for CAs and the Government of Ontario to improve transparency and consistency – by just adopting a policy of full disclosure without spending a penny.

Currently a typical CA Board of Directors consists of about 20 members nominated by constituent municipalities – most of them elected councillors and a few citizen appointees. They oversee the day-to-day business of the CA and also sit on executive committees (akin to appeal bodies) dealing with contested issues (usually related to development). Board meetings are usually dominated by three or four vocal directors while the rest are content to be quiet and inactive. They rely heavily on staff reports and almost always approve what management asks for without serious scrutiny. While this is harmless, if not perfect for routine or mundane matters, it falls short of the desired level of attention important matters deserve from the Board. They routinely approve management decisions, corporate planning, sole sourcing of contracts, and staff hiring using different methods, and organizational restructuring without open discussion. They often forget to follow up their own decisions, perhaps trusting that staff would take care of them. In executive committee settings, where they are supposed to act as judges

and arbiters of contentious issues, directors sometimes take decisions based on incomplete information and without inquiring about diverging staff opinions. It would be prudent to attend to this state of affairs soon, whether Bill 68 is implemented or not.

The OPCA will be overseen by a Board of Directors consisting of at least five and not more than 12 members appointed by the Lieutenant Governor in Council. Section 35.6 of Bill 68 alludes to the qualifications of the directors. What will be considered is the person's knowledge and experience in public administration, corporate governance and finance; and also, the person's knowledge of programs and services provided by authorities. This is all good. However, it would also be prudent to appoint directors whose personal philosophy aligns with the conservation of nature and the public good. A solid scientific grasp of the watershed and water would also be desirable.

Most of the CAs and many municipalities have expressed grave concern about Bill 68. They have passed formal resolutions, sent letters to the province, talked to the media, and put information on their website. Their main line of argument is that CAs are adequately doing their job, to the satisfaction of citizens and municipalities. Hence, there is no compelling reason for a big change. The proposed changes would increase cost, diminish the role of municipalities and hamper local expertise.

Because of the financial dependence on municipalities and the province, CAs have traditionally been treated as junior partners and subjected to significant political pressure. In response, CAs have come to accept this reality and have often gone out of their way to accommodate the wishes of the municipalities and the province. Congruent with this tradition, the CAs' response to Bill 68 has been weak and subdued, despite their serious trepidation about and strong opposition to this bill.

In its response to the ERO posting, the **Credit Valley Conservation (CVC)** stated: "CVC does not support consolidation as proposed. While consolidation may improve equity and service delivery in some regions, the proposed boundaries introduce significant governance, financial, operational, and service-delivery risks for high-capacity conservation authorities like CVC that are effectively supporting safe, sustainable growth."

This suggests that some CAs consider themselves superior to (or at least different from) others and are willing to accept Bill 68 as long as their interests are preserved. This may weaken the united front that is necessary among CAs if they want to significantly influence the proposed change. **Toronto and Region Conservation Authority (TRCA)**, the largest CA, will remain intact as an RCA. TRCA is apparently happy with Bill 68, with only minor objection to its renaming and financial implications. They also consider themselves to be *'high performing'* (TRCA Board meeting, November 28, 2025).

Currently, CA employees are not unionized, and their salary scale is usually lower than those of provincial and municipal employees. If Bill 68 goes ahead and the CAs are brought under the direct control of the province (a *de facto* assimilation), then in future the CA or RCA employees will have to be given the same treatment as others. This will likely significantly increase the operating cost and reduce the volume and quality of front-line services.

According to Bill 68 (Section 35.4), the main responsibility of the OPCA will be to “oversee the governance of authorities and other aspects of authorities such as their operations, including the programs and services they provide, to further the purposes of the Act”; and also to “assess and report on the effectiveness of authorities in furthering the conservation, restoration, development and management of natural resources in watersheds in Ontario, including outcomes related to the implementation of their programs and services.”

These are exactly the functions currently performed by the CA Boards and their management. Therefore, Bill 68 would require abolition of CA Boards and management in order to avoid the duplication of responsibility and its associated inefficiency and conflict. Needless to say, this would not be well received by the CAs and municipalities. Even if they are allowed to exist, the Boards and CA management will be required to follow the directions of the Minister and the OPCA. Not an appealing situation either.

According to Section 35.23, the OPCA may require from authorities (CAs and RCAs) information “relating to its operations, employees, assets, liabilities, rights and obligations, which may include plans, reports and financial statements, including audited financial statements, and may include personal information... The Agency may collect personal information from an authority or from individuals for the purposes of

exercising powers or performing duties under this Act.”

No notice to the individual would be given. “Any collection by the Agency of personal information under this section is exempt from the application of subsection 39 (2) of the Freedom of Information and Protection of Privacy Act...For the purposes of the Freedom of Information and Protection of Privacy Act and the Municipal Freedom of Information and Protection of Privacy Act, personal information collected under this section may be used by the Agency for the purposes of exercising powers or performing duties under this Act, and that use shall be deemed to be for a purpose that is consistent with the purpose for which the personal information was obtained or compiled.”

Sections 39.1, 39.2 and 39.3 deal with the Crown, Agency and Authority liability and warrant legal commentary. Regarding the OPCA, Section 39.2 states that, “No cause of action arises against any current or former member, director, officer, volunteer, employee or agent of the Agency or any person appointed to a council, committee or other body established by the Agency under section 35.11 for any act done in good faith in the exercise or performance, or intended exercise or performance, of the person’s powers, duties or functions under this Act or for any alleged neglect, default or other omission in the exercise or performance in good faith of those powers, duties or functions.”

Section 39.3 affords similar protection for Authorities (CAs/RCAs). Moreover, no proceedings shall be commenced against these persons (Section 39.4).

These two provisions regarding personal information and personal liability are new and no explanation is provided on why they are necessary. Do similar provisions apply to other agencies? Does the province foresee popular discontent and complaints?

CAs, much like other public agencies, not only offer a great opportunity for individuals to make valuable contributions to society, but also allow people to coast along if they choose to do so. Therefore, retaining and recruiting competent staff is crucial to the success of conservation in Ontario.

If, for any reason, Bill 68 proves to be wrong after implementation, the conservation movement of Ontario will be set back by a century – and at a great cost to the environment, the well being of citizens and public treasure. The stakes are therefore high.

# Mass Timber: Building the Future of Sustainable Cities

Vana Tabrizi, EIT and Houman Ganjali, PhD Candidate



In the context of rapid urbanization, housing demand, and climate-driven sustainability targets, **Mass Timber (MT)** has emerged as a viable structural solution capable of addressing both engineering performance requirements and broader urban sustainability objectives.

## What is Mass Timber?

Mass timber refers to a category of engineered wood products in which relatively small wood components such as lumber, veneers, or strands are combined to create large, solid structural components with predictable mechanical properties.

Through processes such as lamination, bonding, and mechanical fastening, wood is transformed into high-performance panels and members capable of spanning long distances, resisting substantial loads, and maintaining dimensional stability under varying conditions. Mass timber products are used for prefabricated structural elements in floors, walls, frames and roof applications. What distinguishes mass timber from dimensional lumber is not simply its scale, but the level of engineering involved in optimizing the material's structural performance, durability, and response to environmental stresses (Canada Wood Council, 2025).

From a technical perspective, mass timber systems rely on engineered anisotropy, orienting wood fibres and laminations in specific directions to optimize strength, stiffness, and dimensional stability. For instance, in one of the market leading plate-type MT products, **Cross-Laminated Timber (CLT)**, layers are oriented orthogonally, allowing panels to span in two directions and resist in-plane and out-of-plane loads. CLT panels

in North America consist of an odd number of layers, typically three to seven layers, and offer high strength, stability, and stiffness, while also being prefabricated with precise openings and dimensions for rapid installation (Wood Works, 2024). This panelized approach effectively turns wood into a plate-type element, comparable in behaviour to reinforced concrete slabs but at a fraction of the weight.

There are linear-type MT products as well that are designed to carry axial and bending loads in column and beam applications. **Glue-Laminated Timber (glulam or GLT)** is one of the most commonly used examples. Glulam is manufactured by bonding multiple layers of dimensional lumber in parallel under controlled conditions, producing elements with high strength and reliability. This product can be adopted for high structural capacity designs, with the added advantage of being formable into curved or tapered geometries (Canada Wood Council, 2025). The laminations in GLT are graded so that defects, such as knots, can be distributed or minimized, resulting in more predictable mechanical properties and more efficient use of raw material.

Mechanically laminated products such as **Nail-Laminated Timber (NLT)** and **Dowel-Laminated Timber (DLT)** entail another branch of mass timber, where dimensional lumber is stacked on edge and fastened together to form structural panels. Mechanically laminated MT products can be advantageous particularly when simplicity, material purity, or specific acoustic properties are desired. **Structural Composite Lumber (SCL)**, including **Laminated Veneer Lumber (LVL)** and **Laminated Strand Lumber (LSL)**, extends the concept further by reconstituting wood veneers or strands into highly



Point-supported CLT floors on glue-laminated timber columns



Cross-laminated timber (CLT) floor panel on glue laminated beams.

uniform billets with consistent strength characteristics. These products exhibit highly predictable physical and mechanical properties making them more efficient in terms of material use (Wood Works, 2024).

### Mass Timber and the Carbon Cycle

What distinguishes mass timber from conventional materials is not only its structural aspects but also its relationship to the environment. Wood is a biogenic material, meaning it participates directly in the carbon cycle. As trees grow, they sequester carbon dioxide from the atmosphere and store it within their cellular structure through the process of photosynthesis. When this biomass is manufactured into mass timber products and incorporated into long-lived buildings, much of that carbon remains stored within the built environment. Therefore, MT products function not only as structural materials but also as a form of long-term carbon storage, while contributing to the reduction of emissions associated with the built environment and supporting broader strategies of sustainable construction practices.

The structural efficiency of mass timber is closely linked to its relatively low density, resulting in a high strength

to weight ratio. Compared to conventional concrete and steel systems, timber structures are significantly lighter, which reduces foundation loads and can make construction feasible on sites where heavier materials would be less practical. At the same time, the large cross-sections used in mass timber contribute to its inherent fire resistance. Rather than failing abruptly, thick timber members form a protective char layer on their surface that slows combustion, insulating the inner core and preserving load-bearing capacity for a defined period. Mass timber elements, due to their scale, provide notable advantages in fire performance as well as structural and acoustic behavior (Canada Wood Council, 2025). This predictable, performance-based response to fire, together with contemporary fire protection strategies has been a key factor in its acceptance within building codes.

Mass timber is also increasingly being used in hybrid systems, where it is combined with steel or concrete to optimize performance. These systems illustrate how mass timber integrates into existing construction paradigms. For example, timber-concrete composite floor systems integrate a timber panel with a concrete topping, allowing for longer spans, improved vibration control, and enhanced acoustic separation. Hybrid systems can

also improve fire performance and structural redundancy, while enabling more efficient use of the strength of each material. These approaches demonstrate that MT can complement other materials, as a part of a broader structural toolkit that can be configured to meet specific engineering, architectural, and performance requirements.

## Adaptability and Long-Term Urban Resilience

Beyond performance and efficiency, one of the most important dimensions of mass timber is how it supports long-term resilience and adaptability in cities. Prefabricated timber systems lend themselves to modular construction, meaning buildings can be designed with flexibility in mind. Structural grids, panelized walls, and repeatable components allow for easier modification, expansion, or even disassembly over time. This adaptability aligns with evolving ideas about buildings as dynamic systems rather than static objects, capable of responding to changing needs without requiring complete demolition. In this sense, MT contributes not only to sustainability at the point of construction, but also to the longevity and lifecycle performance of the built environment.

From a sustainability standpoint, the benefits of mass timber extend beyond carbon accounting. The material is renewable when sourced through sustainable forestry practices, and its production requires less energy than that of conventional materials. Additionally, engineered wood products can utilize smaller-diameter trees and lower-grade timber, improve resource efficiency and support forest management practices such as thinning. This creates a link between urban construction and rural forestry economies, potentially reinforcing sustainable land use patterns.

At the urban scale, these characteristics align closely with the goals of sustainable cities. Reducing embodied carbon, minimizing construction impacts, and enabling the efficient use of materials are all central to contemporary urban planning. Mass timber contributes to each of these objectives while also offering qualitative benefits. The exposure of wood in interior spaces has been associated with improved occupant comfort and well-being, adding a human dimension to sustainability that goes beyond energy and emissions metrics.

## Mass Timber and the Future of Cities

The growing adoption of mass timber also reflects a broader cultural and technological shift in architecture and engineering. Digital design tools, advanced manufacturing techniques, and evolving building codes

are converging to make timber construction more viable at larger scales. As more projects are completed and performance data becomes available, confidence in these systems continues to grow. This feedback loop between practice, research, and regulation is helping to establish mass timber as a mainstream option rather than a niche alternative.

Ultimately, mass timber represents more than a technical innovation; it signals a change in how the built environment relates to natural systems. Instead of relying exclusively on materials that are extracted, processed, and emitted at high environmental costs, MT introduces a model in which buildings can act as extensions of ecological cycles. In doing so, it offers a tangible pathway toward cities that are not only denser and more efficient, but also materially aligned with the principles of sustainability.

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Image 2: Think Wood ([www.thinkwood.com](http://www.thinkwood.com))  
Image 3: Shutterstock (Image ID 2535162045)

# Engineering the Unpredictable: Autonomous Vehicle Safety and Professional Duty

Omid Sadeghi



We have all seen the advertisements. A person sits in the driver's seat of a modern car, relaxing, eating, or chatting on the phone while the steering wheel moves on its own. For years, this was the primary image of the future of driving. However, for engineers working in autonomy, the flashy demo is the easy part. The difficult part, the problem that keeps us up at night, is the unpredictable nature of a Tuesday afternoon in a Canadian winter.

**Autonomous Vehicles (AVs)** are no longer just a research project. They are already being tested and deployed in selected industrial, logistics, and urban use cases. As this technology moves from the testing phase to real-world use, we need to talk about risk with more than just optimism. We need to talk about it with engineering discipline.

## The Human Cost of the Status Quo

It is tempting to view AVs only as a tool for innovation, but the primary goal is safety. The numbers are serious. In Canada, 1,964 people died in motor vehicle collisions

in 2023. This was the highest count in ten years. Globally, road crashes cause about 1.19 million deaths every year.

When we discuss autonomy, we are talking about a way to save lives. However, for these systems to be successful, they must be more than just better than a human in a simulation. They must be credible, measurable, and safe in the chaos of the real world.

## Defining the Boundaries: The Operational Design Domain

One of the most important concepts in AV engineering is the **Operational Design Domain (ODD)**. As defined by the **National Highway Traffic Safety Administration**, the ODD sets the specific conditions under which a system is intended to function. This includes road types, weather, speed, and lighting.

In plain language, every autonomous system has limits. When an engineer defines a clear ODD, they are performing a basic act of safety engineering. Risk

increases quickly when these boundaries are vague. An AV that works perfectly in the sunny streets of Phoenix faces a completely different risk level in a snowy construction zone in northern Ontario.

## When Systems Do Not Break, But Still Fail

Traditional engineering often focuses on functional safety. This ensures that if a physical part fails, the system stays safe. AVs introduce another type of hazard: situations where no component has technically failed, but the system still encounters unsafe conditions because of sensing, perception, specification, or performance limitations.

Consider an edge case like a pedestrian in a bulky costume or a temporary stop sign held by a construction worker. The sensors see them, but the logic might not know how to categorize them. This is why AV safety is a systems engineering challenge rather than a branding exercise. A successful pilot test in a controlled area is proof of concept. There is not sufficient proof that the vehicle is ready for public roads.

## The Professional Engineers Ontario (PEO) Code: Public Welfare is the Priority

For engineers practicing in Ontario, this discussion is about professional identity. Public welfare is the paramount obligation. The PEO guidelines remind us that practitioners must avoid giving engineering opinions unless they are based on adequate knowledge and honest conviction. In the AV context, this means engineers must be the skeptics in the room. We must not confuse technical promise with technical readiness. If the data does not support the safety case, the engineer has a duty to say so.

## The Standardized Path Forward

Engineers have several international standards to help manage these responsibilities:

- **ISO 26262:** This is the standard for functional safety in electronic systems. It addresses hazards caused by malfunctioning behaviour in automotive electrical and electronic systems.
- **ISO/PAS 21448 (SOTIF):** SOTIF stands for Safety of the Intended Functionality. It helps engineers look at performance limits and environmental hazards where no actual part has failed.
- **ISO/SAE 21434:** In a connected vehicle, a cyber weakness is a safety hazard. This standard ensures that cybersecurity is managed throughout the life of the vehicle.

- **UL 4600:** This standard uses a safety-case approach, requiring an evidence-based argument that the product is safe for its specific use.

## Asking the Hard Questions

Before any autonomous system is deployed, we must focus on how it might fail. Engineers and organizations should ask specific questions, for example:

1. What is the exact ODD? What happens the moment the vehicle leaves that domain?
2. What is the minimum-risk fallback state? If the system becomes confused, can it reach a safe stop without human help?
3. How does the system handle degraded modes? What happens when a camera is blocked by mud or GPS signals drift?

This is why we are seeing the most responsible progress in constrained use cases. Low-speed shuttles, fixed-route logistics, and closed-campus industrial vehicles are not lesser forms of autonomy. They are examples of good engineering discipline. They match the complexity of the task to the current maturity of the technology.

## Conclusion: The Final Sensor

Autonomous vehicles represent one of the greatest engineering challenges of our generation. They hold the potential to save thousands of lives and reshape our cities. But that potential will only be realized if we maintain public trust.

Technology can build the sensors, the processors, and the actuators. It cannot replace engineering judgment. As professionals, we are the final sensor in the system. Our job is to ensure that when these vehicles finally take the wheel, they do so with a level of rigour that honours our commitment to the public we serve.

The road ahead is autonomous, but the responsibility remains entirely human.

[If you are interested in what Omid Sadeghi discussed in this article, you may be interested in his upcoming workshop with OSPE.](#)

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Omid Sadeghi, Co-Founder and Chief Product Officer at Telebotics

Image: Shutterstock (Image ID 1157739829)

# Advanced Technologies to Address Climate Change Challenges; Water Contaminants & Scarcity

Saad Y. Jasim, Ph.D., P.Eng.



Observational records and climate projections provide abundant evidence that freshwater resources are vulnerable and have the potential to be strongly impacted by climate change, with wide-ranging consequences for human societies and ecosystems (Bates et al. 2008).

Several decades of noticeable changes in weather temperature can be linked to changes in the large-scale hydrological cycle. Noticeable increases in atmospheric water vapour content, changing precipitation patterns, increased melting of ice and reduced ice cover for water can have significant impacts on ecosystems, infrastructure, and the operation of water and wastewater systems.

Flooding is one of the most common hazards that may cause more damage than other weather-related events. It can occur from tropical storms, hurricanes, swollen rivers, heavy rains, tidal surges, spring snowmelt, local drainage issues and water distribution main breaks. As storms become more frequent and intense and as sea levels rise, flooding will be an ongoing challenge for drinking water and wastewater utilities.

Storms can impact water and wastewater plant operation. The effluent from drinking water and wastewater plants may not be treated properly due to an exceedance to design flow, and the ability of treatment processes (especially disinfection processes) to adjust to that increase in flow, which results in a shorter contact time to provide the proper oxidation reaction or disinfection

to take place. Loss of power, damage to assets and personnel are expected as well during such bad weather incidents.

Additionally, global concern has grown over **Harmful Algal Blooms (HABs)** and their impact on human health and ecosystems. HABs produce toxins known as cyanotoxins, which can accumulate to dangerous levels. Direct consumption of contaminated shellfish or indirect exposure to toxins in the environment can result in serious illness or death (Jasim et al., 2017). Studies have shown that three cyanotoxins, microcystin-LR, anatoxin-a, and cylindrospermopsin, can be completely oxidized at ozone concentrations below 1 mg/L (Jasim et al., 2020).

### Chemicals of Emerging Concern

Chemicals of emerging concern, including **Pharmaceutical and Personal Care Products (PPCPs)**, and endocrine disrupting compounds are found in discharges from sewage treatment plants, industrial compounds, and hospitals.

The continuous load of pharmaceutical compounds being added to wastewater systems through human excrement as well as effluents from hospitals and manufacturing plants is responsible for their widespread detection in municipal wastewaters (Uslu et al. 2015). Conventional **Municipal Wastewater Treatment Plants**

**(MWWTPs)** have limited success in removing many pharmaceuticals, resulting in the discharge of these pollutants into receiving surface and ground waters that are often the sources of drinking water. A vast number of pharmaceutical compounds have been reported in both the influents and effluents of wastewater treatment plants as well as natural waters and drinking water sources in the Great Lakes Basin (Jasim et al. 2006; Metcalfe et al. 2004; Rahman et al. 2010, Uslu et al. 2013).

The removal efficiencies of pharmaceuticals, personal care products and endocrine disrupting compounds by conventional treatment processes with the addition of ozone compared to the same process without the use of ozone, showed a major improvement (Jasim et al. 2006), Figure 2.

### Water Shortages and Reuse

Due to global water scarcity, the reuse of treated wastewater has become a necessity and is widely recognized as a valuable water resource.

Many countries have successfully established a water reuse program to utilize their wastewater resources and manage their overall water demand.

A risk associated with reusing treated wastewater from domestic, commercial, agricultural and industrial sectors

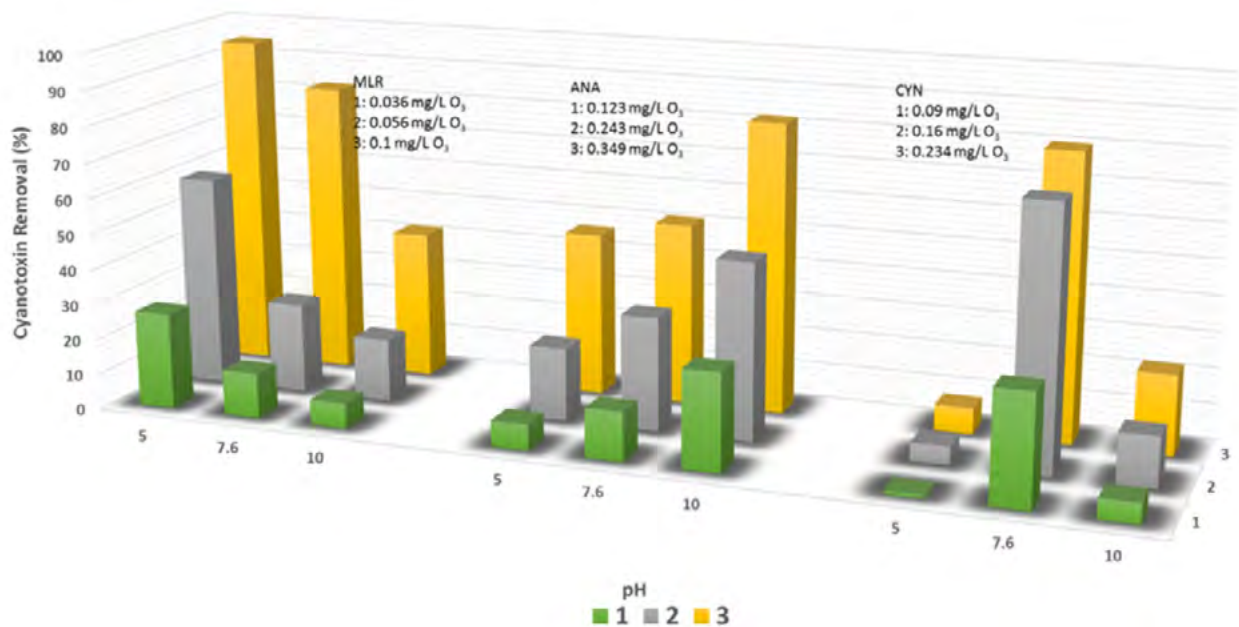


Figure 1: Removal of cyanotoxins from Detroit River water with ozone at different pH..

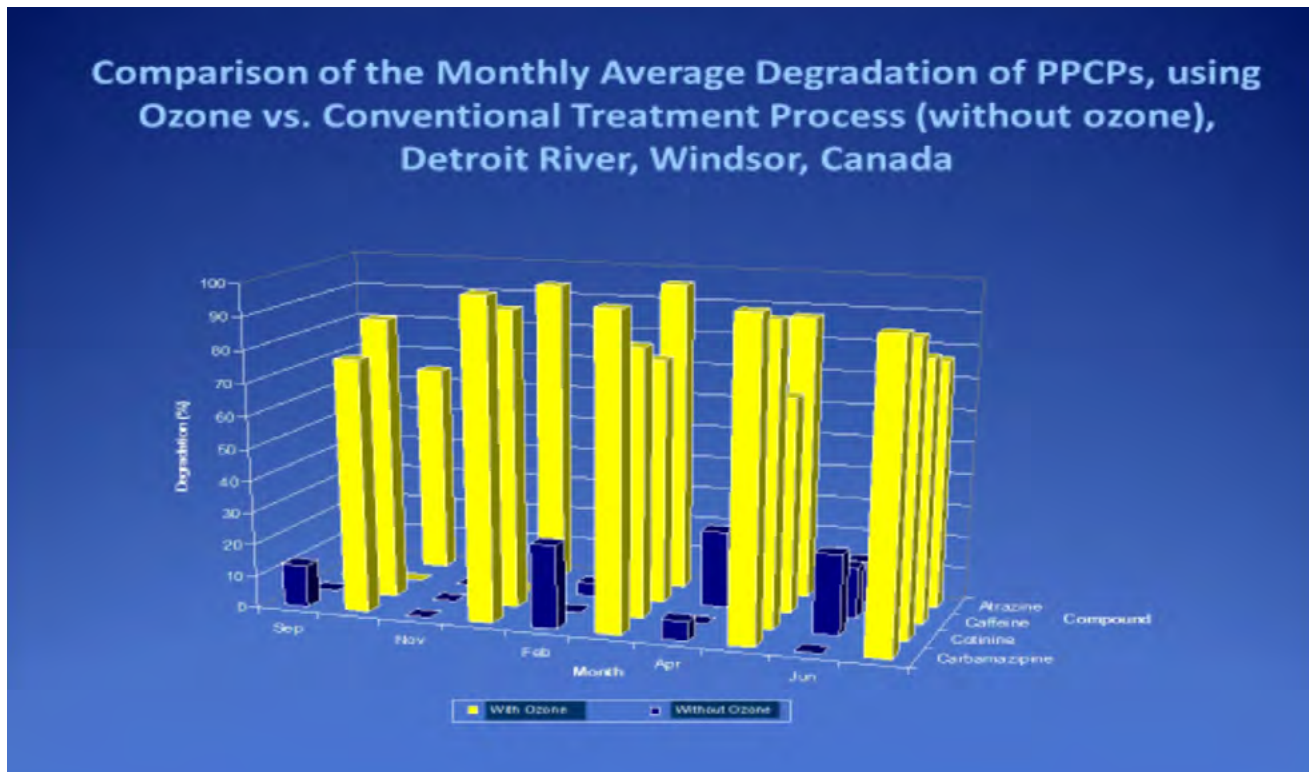


Figure 2: Removal of PPCPs from surface water, Jasim et al. 2006.

is that the water may contain many contaminants such as (Jasim et al. 2016):

- i. pesticides, solvents
- ii. pathogens
- iii. heavy metals
- iv. nutrients
- v. chemicals of emerging concern; pharmaceuticals, personal care products and endocrine disrupting chemicals.

### Ozone as a Disinfectant

In addition to ozone’s excellent disinfection capability, it also has other benefits of taste and odour removal, enhanced particulate removal, oxidation of iron, arsenic, manganese, and reduction of trihalomethane (a disinfectant byproduct) formation.

A study on a secondary municipal wastewater treatment plant effluent in Ontario, Canada, found that the degradation of three pharmaceutical compounds was directly related to their rate constants with ozone (Uslu et al. 2015), and increased from 81%, 53%, and 34% to 100%, 82%, and 76% as the O3/DOC ratio was increased from

0.14 to 0.33 (Figure-3).

The findings from research on the use of ozone and ozone based **Advanced Oxidation Processes (AOPs)** for the significant improvement of water quality and removal of chemicals of emerging concern will benefit many countries that have water scarcity by offering new alternatives for the treatment of wastewater in domestic, agricultural and industrial applications. Treated Sewage Effluent Reuse will provide a significant water source for industrial applications such as cooling towers and agriculture, and would reduce the demand on freshwater resources.

The application of ozone as part of a robust multi-barrier water system can play a significant role in addressing challenges related to chemicals of emerging concern and provide solutions to water scarcity and quality issues created by climate change

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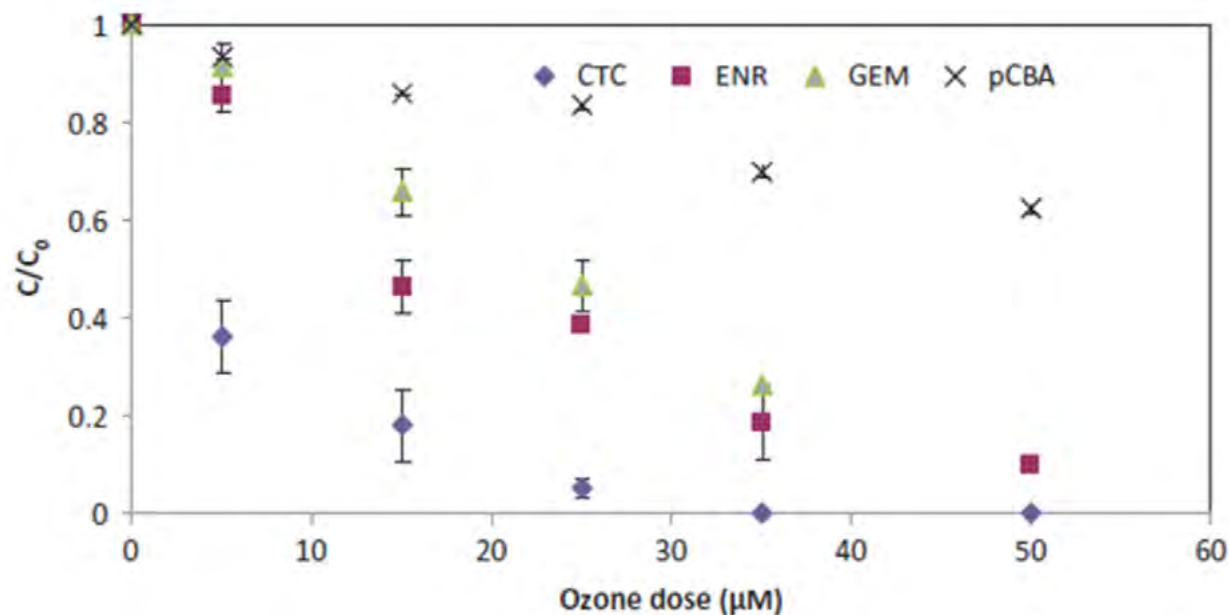


Figure 3: Decrease in the concentrations of pharmaceutical substances; chlorotetracycline (CTC), enrofloxacin (ENR), gemfibrozil (GEM) and para-Chlorobenzoic acid (pCBA) as a function of ozone dose application for treated sewage effluent, Canada, (Uslu et al. 2015)

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Saad Y. Jasim, Ph.D., P.Eng., Member of OSPE's Climate Crisis Task Force

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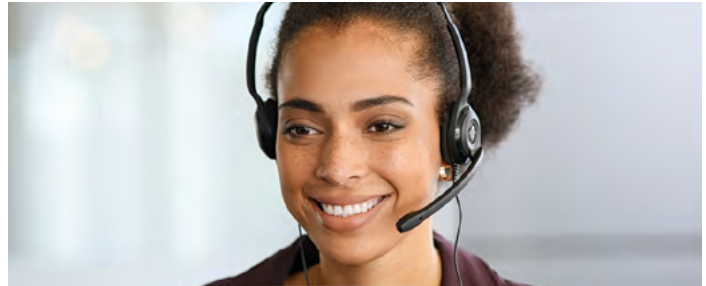
### Examples of questions that you can ask a helpline lawyer:

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ARAG will provide you with access to HR Assistance where you can speak to a Human Resources professional who can provide you with information regarding HR issues that are impacting your business.

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# The Power of Inclusive Design in Facilitating Innovation

Zubair Hossain, P.Eng., PMP



Engineering has always been about applying scientific knowledge and creative thinking to address complex challenges. Yet for too long the field lacked broad representation, which meant many viewpoints and lived experiences were left out of the design process.

Now, in this hyper-connected world, as engineering challenges become increasingly global, interconnected and focused on real human needs, **Equity, Diversity, Inclusion and Accessibility (EDIA)** are no longer just organizational values, they are the essential components of innovation, collaboration, and technical success.

Modern engineering projects and products succeed when they are designed with people in mind. Technical performance alone is no longer enough; solutions must also be accessible, inclusive, user-friendly, and adaptable to diverse communities. By understanding the perspectives of different users, engineering teams can

create designs that are practical, widely accepted, and better-suited to solving complex real-world challenges.

## The Innovation Gap: Why Diverse Perspectives Matter in Innovation

Homogeneous teams are more likely to fall into “groupthink,” a psychological phenomenon in which challenges are approached through a narrow and often unchallenged perspective. When teams lack diversity, they often approach problems through a single lens: studies from **MIT Sloan School of Management**<sup>1</sup> showed that homogeneous groups tend to be less rigorous in decision-making and more prone to errors. Diversity strengthens critical thinking, problem-solving, and long-term organizational success.

- Diverse Teams Innovate Faster: Organizations with

above-average diversity on their management teams report higher innovation revenues (45% of revenue from innovation, compared with 26% for less diverse companies).<sup>2</sup>

- **Better Problem Solving:** A diverse workforce brings a wealth of perspectives, allowing teams to identify blind spots, challenge assumptions, and create more robust, effective solutions.
- **Superior Performance:** Companies in the top quartile for gender diversity are 15% more likely to have financial returns above their national industry medians.<sup>3</sup>

Innovation improves when organizations include diverse viewpoints and encourage constructive disagreement in decision-making.<sup>4</sup>

## Inclusive Engineering: What Difference Does It Make?

Many everyday products and services we now take for granted were created by considering diverse needs and perspectives.

In many cases, solutions originally designed for a specific group ultimately improved accessibility, convenience, and usability for everyone. This is a concept known as the “curb cut effect.”<sup>5</sup> The term “curb cut effect” originated from curb cuts—another simple yet brilliant example of inclusive engineering—originally designed to improve accessibility for wheelchair users. These sidewalk ramps later proved beneficial for many others, including cyclists, delivery workers, and pedestrians with strollers or luggage, demonstrating how accessibility-focused design can create broader benefits for society as a whole.

From everyday products to major innovations, inclusive design appears in many forms:

- **Voice Recognition/Virtual Assistants:** Originally advanced through accessibility-focused research for hands-free computer interaction, voice technologies now benefit millions of users through everyday convenience, smart-home control, and mobile assistance.
- **Closed Captions:** On August 5, 1972, a broadcast featuring Julia Child became the first nationally televised program in the United States to include captions for deaf and hard-of-hearing viewers. Closed Captions (CC/ subtitles) are now widely used by the general public in loud environments, for comprehension, or language learning.
- **Dark Mode:** Originally designed to assist users with

low vision or light sensitivity, it is now a standard, energy-saving feature that reduces eye strain for all users and improves visual comfort in low-light environments.

- **OXO Good Grips:** Kitchen tools featuring large, soft, and easy-to-grip handles were originally designed for people with arthritis (inspired by founder Sam Farber observing his wife with arthritis struggle to use metal kitchen tools). The products became mainstream due to their ergonomic design that benefits all home cooks.
- **Lever-style Door Handles:** These handles replaced traditional knobs to assist people with limited grip strength. Lever-style door handles are now widely valued for their convenience (e.g., when carrying groceries).
- **Sensory-Friendly Packaging:** Brands are increasingly adopting inclusive packaging designs that support consumers with sensory and accessibility needs. Examples like Rice Krispies treats’ “Sensory Love Notes,” which include tactile stickers and audio options for consumers with autism or visual impairments.
- **Adaptive Clothing:** Fashion brands like Target and Tommy Hilfiger offer clothing with magnetic closures, one-handed zippers and side-openings designed for ease of dressing for people with disabilities. Adaptive clothing also benefits many others—including older adults, children, individuals recovering from injuries, and anyone seeking greater comfort, convenience, or ease of dressing in daily life.
- **Audiobooks:** Initially created to help visually impaired soldiers in 1935, audiobooks have evolved into a mainstream, multi-billion-dollar industry widely used by commuters, multitaskers, and learners.
- **Tactile Pavement:** Originally engineered to assist people with visual impairments by providing cane-detectable warnings near hazards such as roads, transit platforms, and crossings, tactile paving now enhances navigation and safety for all pedestrians, including distracted walkers in busy urban environments.

## Disrupting the Status Quo: Building a More Inclusive Engineering Profession

Recognizing diversity and inclusion as drivers of innovation is only the first step; bridging the diversity gap requires intentional action.

- **Integrate EDIA into Organizational Strategy:** EDIA must be driven from the top-down – in decision-



making, and long-term business goals, with accountability measures and inclusive performance metrics.

- **Implement Inclusive Recruitment:** Reduce barriers and unconscious bias through practices such as blind resume reviews, diverse hiring panels, equitable promotion pathways, and skills-focused recruitment approaches.
- **Foster a Culture of Belonging and Psychological Safety:** Create environments where employees feel respected, supported, and empowered to contribute diverse perspectives, and offer flexible work models to support caregivers and underrepresented groups.
- **Invest in Education, Mentorship, and Representation:** Strengthen the future talent pipeline by partnering with organizations and educational initiatives that support women, Indigenous communities, racialized groups, persons with disabilities, and other underrepresented populations in STEM and engineering.
- **Inclusive Learning Environments in STEM:** Building a more inclusive engineering profession begins in the classroom. Small but intentional practices such as inclusive teaching, diverse representation, equitable teamwork, and human-centered problem-solving can help create a stronger and more innovative future workforce.

Engineering shapes the way we live, move, and connect with the world around us. By embracing diversity and inclusion, we open the door to new perspectives and create sustainable solutions for everyone. As engineering challenges become more complex, our ability to innovate will be directly proportional to our ability to include.

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Zubair Hossain, P.Eng., PMP, Member of OSPE’s EDIA Task Force

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# One Hundred Cherry Blossom Trees: Reflections on the Art of Engineering Innovation

Macey Clandfield



All throughout school, engineers become accustomed to taking tests, solving problems, and answering questions where the professor marks our responses as right or wrong. There is an answer key, and somewhere in the back of a textbook, the solution exists. In real-world engineering, the answer key disappears, and learning to work within the uncertainty becomes fundamental to achieving true innovation.

This shift can feel jarring. For most of our academic careers, we operate in a world of defined solutions and concrete outcomes. Stepping into industry for the first time feels like someone has swapped your GPS for a compass. You still know where you're going but now you have to figure out how to get there yourself. This article reflects on some key lessons I have learned so far through the product development process and what it means to navigate ambiguity as a young engineer.

## The Space In Between

A disorienting aspect of innovating in industry is that, not only are solutions harder to find, but the problem itself is no longer fixed. To illustrate this idea, consider being given two tasks. For the first task, you are asked to paint a cherry blossom tree. For the second task, you

are asked to create a painting that evokes feelings of happiness. If one hundred people were given the first task, you would get one hundred cherry blossom trees; stylistically different and personally expressive, but fundamentally the same. Give the second task to one hundred people and you would likely get one hundred entirely different paintings: a birthday party, a sunny field, or an airport reunion. Every single one still achieves the end goal, and every single one is impossible to mark as wrong.

That is the nature of open-ended engineering problems. There are not just multiple viable solutions, there are often hundreds, if not thousands. It is within this scope of possibility that innovation happens. The question is no longer what is the *right* answer? But which answer is the *best* one for this problem, this user, at this moment. To turn an array of options into a workable solution is where understanding the problem at hand becomes essential.

## Define Before You Design

Our brains are wired to jump directly from problem to solution. Cognitive ease is the natural tendency for our brains to gravitate towards things that feel familiar, and easier to process. Our minds are essentially efficiency

machines, constantly seeking ways to reduce mental load [1]. As a result, jumping straight to a 'bad' solution often feels more comfortable than sitting with the unresolved problem. However, when we build the first thing that comes to mind, we often solve the wrong problem entirely. In engineering, the true power lies in the space between problem and solution; where the problem is questioned, reframed, and sometimes entirely redefined. Because often, a well-understood problem doesn't just lead to a better solution; it often leads to a fundamentally different one.

Think of being tasked with building a bridge to connect point A to point B. Your initial instinct is likely to start designing the bridge. But what if, after sitting with the problem, you realize the actual goal was not a bridge at all, but a better method to move people between two places? Suddenly a ferry becomes a viable option. A road reroute becomes a possibility. You are no longer designing a solution that meets a specification; you are designing a system that achieves a favorable user experience. Since this skill goes against our natural instincts, the only way to learn it is to practice it intentionally by resisting the urge to jump to quick, familiar, and comfortable solutions and learn to sit with and identify the true problem.

## The Courage to Start

Even once the problem is understood, one of the most challenging steps is simply starting. When I first began working on product development projects, I would spend hours trying to perfect early 3D models before moving forward. In the time spent refining a single 'perfect' iteration, I could have built three 'functional' iterations and gotten much closer to a final product. The hesitation came from a fear of building something that didn't *work*. But in prototyping, especially with plastics and rapid fabrication methods, a part that doesn't fit can be glued, sanded, drilled, or adapted. Nothing is truly wasted. Each broken version teaches you something that staring at your 3D model never could.

Learning to value the imperfections in your design is part of the productive discomfort of engineering. No matter how much time you invest in an early version, there will be features that don't work as planned. That is not a failure of process, it is the process. It is always better to just make the prototype and evaluate why it doesn't work so you can carry those learnings into the next iteration.

Here is one example from early on that made this clear to me. I was designing an enclosure for a printed circuit board assembly and had gone through two rounds of prototyping before realizing I had forgotten

to incorporate any way to access the reset button on the board. Although it seemed like a small oversight, it would have caused problems in production. Now, every time I begin to work on a design (even when there is no button in sight), my mind automatically asks: *Are there any internal components that need to be accessed?* This is the compounding value of iterative design: each oversight adds a new item to your internal checklist, which over time becomes a natural part of your design process.

## From Mind to Matter

Real solutions have to fall within the constraints of a project, which can include budget, timeline, or client requirements. One of the more nuanced aspects of product development is understanding how your chosen manufacturing method shapes what is possible.

A part designed for **Computer Numerical Control (CNC)** machining assumes any internal geometry can be accessed by a rotating cutting tool with a finite radius, which means sharp internal corners are not achievable. The same part designed for injection molding requires draft angles on vertical faces to allow it to be released cleanly from the mold. A 3D printed part may perform well when loaded in one direction and fail unexpectedly in another, because printed parts are anisotropic (their strength varies with the orientation of the print layers). Understanding these constraints is a part of the problem definition. Having a better understanding of manufacturing methods results in less rework in the future. Think of reapplying the "define before you design" idea not to the user's problem, but to the physics of creating your design.

## Talking to Experts

Often, many challenges you may encounter throughout the design process have either been solved before, or at least partially addressed. There are experts who dedicate their entire careers to a specific component, material, or process that may represent only a small part of your entire product. Engaging with these individuals can provide insights far more valuable than what can be gathered independently. When I first started, I felt pressure to arrive at novel solutions for every challenge. Although that instinct is natural, it often tends to be inefficient and unnecessary. The most innovative products are rarely built from entirely new ideas; they incorporate an intelligent combination of existing ones applied in new contexts.

In my own experience, exploring something as seemingly simple (or so I thought) as selecting an adhesive, led

to a deep dive into material science, chemistry, and regulatory standards. This highlighted that every feature, every process, and every material used in your design represents someone else's entire career and engineering discipline. Realizations like this foster a greater appreciation for the connectedness and collective knowledge within the engineering community.

### The Art of the Process

Engineering innovation is not a flash of brilliance. It is often nonlinear, messy and uncomfortable. It is swapping your GPS for a compass and moving anyway. It is sitting with a problem long enough to understand it before reaching for a solution. It is building the imperfect thing, finding everything wrong with it, and using those learnings to build the next imperfect thing.

What I've come to value most about this kind of work is the opportunity for continuous learning. Every mistake installs new knowledge; every constraint points toward a valuable conversation. Every failed version of a design makes the next one smarter. I am still learning to treat the process as an art and appreciate the craft within the mess. I know I have barely scratched the surface

of what product development truly entails, with every project serving as a reminder of how much there is still to discover.

In school, we are given variables and taught to *solve* for X. In engineering, we have to first *decide* what X is, and *why* it's worth solving for at all. That question is where true innovation lies.


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Macey Clandfield, Member of OSPE's Energy Task Force

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# **New!** OSPE's Career Insider Series

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### **Share your insights!**

We're always looking for experienced professionals to speak at OSPE's Career Insider program. If you're interested in learning more, email [rafandi@ospe.on.ca](mailto:rafandi@ospe.on.ca).

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## Career Coaching

OSPE has partnered with CareerCycles to offer members one-on-one professional career coaching.

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Engineers4Hire secures valuable engineering and STEM talent for the business community

With over 40 years of talent search and retention experience, along with their strategic collaboration with OSPE, Engineers4Hire provides a one-of-a-kind solution for businesses in need of talent and candidates seeking rich work opportunities.

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## OSPE's EngTalks Events



OSPE is excited to introduce our new **EngTalks** event series. These sector specific special events will be a combination of thought leadership and learning, providing the engineering community with opportunities to connect and share on the topics that are shaping the industry.


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### Engineering the Transition – Building Ontario's Net-Zero Future

**June 18, 2026 | Ottawa**

This event will explore how engineering leadership is advancing Ontario's net-zero transition through solutions such as electrification, grid modernization, building decarbonization, and climate-resilient infrastructure. Participants will gain practical insights, learn how governance and standards support climate action, and explore ways to integrate equity, Indigenous knowledge, and community-centred approaches into implementation.

Bringing together engineers, government leaders, energy professionals, industry representatives, academics, Indigenous organizations, and NGOs, the event will foster collaboration and knowledge sharing to accelerate net-zero solutions across Ontario.



### Positioning Engineers as Leaders of Innovation & Design Thinking

**September 16, 2026 | Toronto**

The role of the engineer is more multi-faceted than ever. Engineers have the responsibility to do more than just problem solve, they innovate, using new technologies and technique that drive our economy and ensure the smart growth of our communities.



### Land Drainage Conference 2026

**October 2026 | Guelph**

The Ontario Land Drainage Conference is an annual event bringing together Ontario's leading drainage engineers, municipal professionals and industry experts for two days of networking and collaboration.

# A Recap of EngTalks 2026: AI & the Future of Engineering

OSPE's first EngTalks symposium of the year was a dynamic and forward-looking day of discussions on the role of **Artificial Intelligence (AI)** in engineering practice. Bringing together engineers, industry professionals, and academia, the sessions explored how AI influences engineers' decision-making, productivity, risk management, and responsibilities, as well as ethical implications of using AI in engineering work. Below are some key themes that emerged throughout the event:

## AI as an Engineering Tool

AI is best understood as an augmentation tool, enhancing engineers' ability to process complex data, explore design options, and improve outcomes. It supports, rather than replaces, the expertise and professional judgment that define engineering practice.

## Managing Risk in AI Applications

Participants highlighted several key risks associated with AI adoption, including algorithmic bias, limitations in model reliability, and data sovereignty. These challenges underscore the importance of assessing AI-generated information, particularly in high-risk applications where public safety is at stake.

## Evolving Skills and Workforce Readiness

As AI becomes more embedded in engineering workflows, the profession's skill requirements are evolving. Engineers must develop AI literacy and skills in applying AI. Continuous professional development will be essential. To support the engineering workforce, engineers must also support Engineering Interns (EITs) to ensure they have the skills necessary to succeed in traditional engineering and AI-enhanced work.

## The Need for Modernized Policy and Regulation

Participants emphasized the need to modernize standards and guidance while maintaining the profession's core mandate of protecting the public. A strong consensus emerged around the value of risk-

tiered regulatory approaches where high-risk applications require stringent oversight, and lower-risk uses allow for greater flexibility. Well-designed regulatory frameworks support competitiveness by providing certainty for investment, encouraging responsible innovation, and preventing inconsistent or unsafe practice.

## Building Trust: Explainability and Validation

Trust in AI systems depends on more than transparency alone. While full explainability may not always be feasible, engineers must be able to justify decisions and ensure outputs meet defined safety and performance standards. Validation, testing, and auditability were identified as critical safeguards.

## Conclusion: Shaping AI's Role in the Public Interest

In an AI-enabled future, engineering expertise remains essential to ensure new, smarter systems serve the public good. OSPE will continue to advance conversations, provide resources and support engineers as they navigate this transition.



From left to right: Susan McCahan, Ka-Hing Lin, Antoine Gerritsen, Greta Cutulenco, and Aaron Pereira on the panel, "Engineering with Intelligence: How AI Is Transforming Design, Testing & Project Delivery," at EngTalks 2026: AI & the Future of Engineering in Waterloo, ON.

# OSPE's Upcoming Events

JUN  
17

## Engineering Employment Event

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## Engineering Employment Event

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GTA, ON

*Registration coming soon.*

NOV  
13

## Ontario Professional Engineers Awards (OPEA) Gala

OSPE proudly celebrates Ontario's top engineering talent at its annual -awards gala, bringing together innovators, leaders, and policymakers to honour excellence in engineering.



Universal Eventspace, Vaughan, ON

# 2026 OSPE Classic Golf Tournament

On June 4, OSPE members and partners gathered at **Angus Glen Golf Club** for the **2026 OSPE Classic Golf Tournament**. In addition to a round of golf on a world-class course, the event featured a silent auction, helicopter ball drop, and mulligan sale that raised over \$3,500 for the **Ontario Professional Engineers Foundation for Education**. OSPE is already eagerly planning next year's tournament. Stay tuned to our digital channels for updates on all upcoming events.



OSPE CEO, Sandro Perruzza, addressing golfers at the 2026 OSPE Classic Golf Tournament in Markham, ON.



Golfers at the driving range during the 2026 OSPE Classic Golf Tournament in Markham, ON.



A golfer grabbing a drink from the Fiat Coffee Martini Bar at the 2026 OSPE Classic Golf Tournament in Markham, ON.



A group of golfers ready to hit the course at the 2026 OSPE Classic Golf Tournament in Markham, ON.



The Helicopter Ball Drop for Education at the 2026 OSPE Classic Golf Tournament in Markham, ON.



Golfers cooling down with some ice cream from the Stubbe's Ice Cream Truck at the 2026 OSPE Classic Golf Tournament in Markham, ON.



Nada Belhadfa from Portage CyberTech accepting the prize for Closest to the Pin – Women from OSPE CEO Sandro Perruzza (left) and Nick Burgwin, P.Eng. (right).



A golfer practicing their swing at the 2026 OSPE Classic Golf Tournament in Markham, ON.

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# OSPE's Annual General Meeting 2026 Recap



OSPE's Annual General Meeting (AGM) is held in accordance with our Bylaws on an annual basis. This year, it was held virtually on Wednesday, May 6 at 6:00 PM.

Members and guests who attended the meeting got a chance to celebrate OSPE's progress in 2025, recognize the incoming and outgoing Board Directors, and conduct official OSPE business.

Here is a summary of the events of the AGM:

## Introduction

The AGM opened with remarks from **OSPE Chair, David Carnegie, P.Eng.** He offered a land acknowledgment for the evening's proceedings and thanked OSPE's Annual Partners and the 2025-2026 Board of Directors. Following these introductory statements, the members voted to approve the minutes of the 2025 AGM.

David Carnegie then recognized engineering industry partners in attendance.

## Report from the Chair & CEO

OSPE CEO Sandro Perruzza joined OSPE Chair David Carnegie to highlight some of the exciting progress and achievements OSPE made in 2025. The past year was especially meaningful as OSPE celebrated its 25th anniversary.

Sandro noted that over the years, OSPE's foundational purpose has remained constant while the impact the

organization has only grown.

Sandro went on to highlight some key drivers of impact in the past year.

**EngCon** – OSPE hosted its Engineering Conference (EngCon) at Blue Mountain in Simcoe County. The expanded two-day destination format allowed OSPE to deeply connect with members and engage on the topics that matter most to engineers.

**Thought Leadership Thursdays** – For OSPE's Engineering Academy, the most popular learning program is Thought Leadership Thursdays. The weekly webinar continues to set organizational records for participation, and its wide range of topics reflects the diverse interests of Ontario's engineering community.

**Advocacy** – OSPE continues to deliver critical feedback to policy makers focused on areas where sound engineering input can have significant economic and societal impact.

Some policy wins from 2025 include increased investments in Ontario's nuclear sector; increased recognition of the value of progressive Indoor Air Quality policy; and support for increased development of our precious critical minerals, provided it be done with an aim towards safety, equity and sustainability.

OSPE also initiated important discussions toward the goal of implementing a national license as a means of reducing costs and restrictions on talent, a critical plank to any **Canada Strong** strategy.

David Carnegie, then drew attention to some key organizational findings from the past year.

**2025 Benchmarking Report** – Following the benchmarking report published in 2022, OSPE got more than double the number of respondents for the 2025 iteration, revealing even better insights into the engineering community. David Carnegie reflected on how the findings will inform OSPE’s actions moving forward as we have more information on members motivations and concerns.

**Events** – In the past year OSPE has made face to face connections with nearly 4,000 OSPE members at online and in-person events.

**Advocacy Score** – When asked, OSPE members gave OSPE’s advocacy efforts an approval rating of 4.16/5. With some room to grow, OSPE is encouraged that the issues that matter to engineers are being addressed.

**Budget** – The association is posting a balanced budget for 2025. Following a period of strategic investment in OSPE’s **EngLearn** initiative, OSPE has returned to a strong financial position.

To wrap up the Chair and CEO Report, David Carnegie pointed to exciting initiatives for the coming year.

- A non-member research study to help OSPE better understand how to engage more members of the engineering community and convert them to members.
- The establishment of a new member engagement index to measure the depth of member engagement, helping us even more deeply align our activities with member needs.
- OSPE’s online member community, a platform to get members to connect with each other on shared interests, and provide input on key issues in engineering to ensure that OSPE’s voice stays true to the perspectives of Ontario’s Engineers
- Increased collaboration with our new sister organization in British Columbia, the British Columbia Society of Engineering and Geoscience.

## Report from the Nominating Committee

**Nick Colucci, P.Eng.**, Nominating Committee Chair delivered the report.

This year, there were four open Board positions.

The following professional engineers became Directors of the Society and will hold office for a three-year term.

- Shelly Dietner, P.Eng.
- Feyisayo Enuiyin
- Jonathan Hack, P.Eng.
- Meggen Janes, P.Eng.

We are pleased to have this group of dedicated engineers on the OSPE Board. Their expertise and leadership will help guide our mission to create a better future for the engineering profession and society at large.

After the Annual General Meeting the Board of Directors elected the following individuals as Officers of the OSPE Board for the 2026-2027 term:

- Nicholas Burgwin, P.Eng., Chair
- Meggen Janes, P.Eng., Vice Chair
- Shelly Deitner, P.Eng., Treasurer
- John Hazel, P.Eng., Secretary
- David Carnegie, P.Eng., Past Chair

These will be the members of the Executive Committee effective immediately.

## Report from the Treasurer

OSPE Treasurer, Meggen Janes, P.Eng. delivered the report on OSPE’s financial statements for the fiscal year ended December 31, 2025, including a summary of OSPE’s revenue and expenses.

## Report from the Audit and Finance Committee

Chair of the Audit and Finance Committee, Meggen Janes, P.Eng. presented the report and the motion was carried to appoint BDO Canada, LLP as auditors of the Society.

## By-law Number 1-2025

OSPE Chair, David Carnegie brought to consideration the confirmation of By-law Number 1-2025, which amends By-law Number 1-2023 and the motion was confirmed.

This amendment relates to the term of directors. Under the current by-law, directors are elected for a three-year term, ending at the third annual meeting following their election.

The proposed amendment maintains this general rule but introduces an important clarification. Where a director holds the position of Chair or Vice-Chair of the Board, their term may extend to the maximum period permitted under the **Ontario Not for Profit Corporations Act (ONCA)**.

This change is intended to support continuity in Board leadership and align our governance framework with legislative requirements and best practices.

The amendment does not create unlimited tenure; it simply allows flexibility up to the statutory maximum of 4 years per term for directors serving as Chair or Vice-Chair.

## Closing Remarks

Chair David Carnegie took a moment to thank each outgoing Board Director for their special contributions to OSPE.

The directors who completed their 3-year terms this year are **Mark Emmanuel, P.Eng.**, and **Caroline Wojtyla, P.Eng.**

### Thank You to Chair David Carnegie, P.Eng.

As David Carnegie finished his term as Chair of the OSPE Board and as a Board Director, he reflected on his 6 years with pride.

Vice Chair Nicholas Burgwin, P.Eng. reflected on David's time on the OSPE Board, and thanked him for his many contributions to OSPE, including his commitment to the organization, his thoughtful (and at times appropriately challenging) voice as a director, and his leadership as Chair.

## Call for volunteers!

» OSPE is looking for women in electrical or computer engineering to volunteer with the GE Healthcare STEAM summer camp for grade 8 girls.

📅 Openings on August 10th and 12th

📍 Mississauga, ON

Email us at [volunteer@ospe.on.ca](mailto:volunteer@ospe.on.ca) for more information.



**“Being recognized by the Foundation lifted financial stress and inspired me to keep challenging myself, now I’m pursuing a PhD in Electrical and Computer Engineering.”**

**Vanessa Hoang**

**Toronto Metropolitan University**  
Undergraduate Scholarship Recipient &  
Gold Medalist



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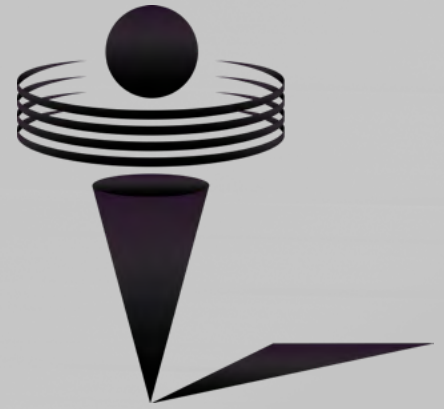
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[www.engineersfoundation.ca](http://www.engineersfoundation.ca)

**Scan to learn more:**



# The Results Are In: OPEA 2026 Awardees



OSPE is thrilled to announce the winners of the **2026 Ontario Professional Engineers Awards**. This group of engineers showcases the diverse ways that engineering professionals contribute to society. These engineers have made waves in their industries and in the engineering community. OSPE is proud to honour the following list of awardees. This group represents the very best of the Ontario engineering community and we are thrilled to bring Ontario's engineers together on November 13 at Universal Eventspace in Vaughan, ON to celebrate their accomplishments.

For more information on each awardee and to purchase tickets please visit [opeaawards.ca](https://opeaawards.ca).



**Professional Engineers Gold Medal**  
Dr. Mohamed Lachemi, P.Eng.



**Citizenship Award**  
Daniel Carson, P.Eng.



**Engineering Medal**  
*Engineering Excellence in Industry*  
Ian Cameron, P.Eng.



**Engineering Medal**  
*Management*  
Harneet Panesar, P.Eng.



**Engineering Medal  
Entrepreneurship**  
Dr. Hanan Anis, P.Eng.



**Engineering Medal  
Research and Development**  
Dr. David Clausi, P.Eng.



**Engineering Medal  
Young Engineer**  
David Boroto, P.Eng.



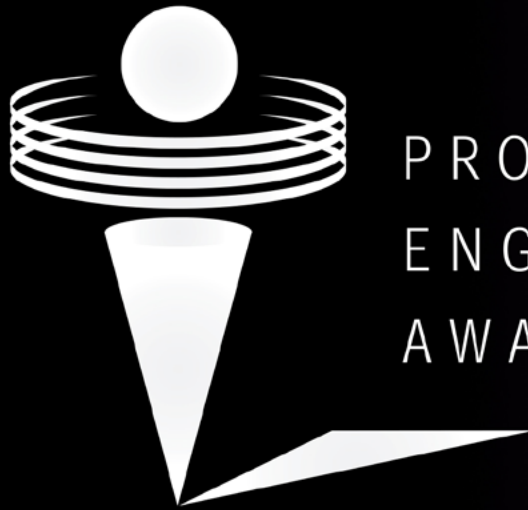
**Engineering Medal  
Young Engineer**  
Sana Abou-Shaaban, P.Eng.



**OSPE Sustainability Award**  
Manmohan Toor, P.Eng.



**Distinguished Lifetime  
Achievement Award**  
Suzanne Tessier, P.Eng.



# PROFESSIONAL ENGINEERS AWARDS

## Recognize a great engineer in your community!

Since 1947, the **Ontario Professional Engineers Awards (OPEA)** have recognized professional engineers in Ontario who have made outstanding contributions to their profession and their community. The Ontario Society of Professional Engineers is proud to honour the very best of the Ontario engineering community at an annual awards gala in November. This annual gala brings industry innovators, business leaders and policy makers together to celebrate and be inspired by engineering excellence and achievement.

Recognize an engineer the areas of:

- Innovation
- Community Service
- Entrepreneurship
- Research
- Leadership
- Sustainability
- And more!



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### Who is eligible to be nominated?

All nominees must hold a valid P.Eng. licence with Professional Engineers Ontario (PEO), be in good standing with PEO and demonstrate exceptional achievement, leadership, or contributions within their profession, industry, or community.

---

### Who can nominate?

Nominations may be made by any P.Eng. licence holder of Professional Engineers Ontario (PEO). The nominee must not be aware of the nomination and self-nomination is not allowed.

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### Benefits to the Awardee

Recognition on social media, physical award, tickets to the gala dinner, video vignette and marketing of accomplishments to the engineering community.

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### 2027 Nominations

- Nominations Open: July 1st, 2026
- Nominations Deadline: February 24th, 2027
- OPEA Gala: November 2027

# Award Types

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## The Gold Medal

The Gold Medal is the OPEA's highest honour, recognizing exceptional professional leadership, technical excellence, and a longstanding commitment to public service and the engineering profession.

## Citizenship Award

This award recognizes professional engineers who have made outstanding contributions to public service through the application of their engineering expertise, leadership, and volunteer efforts for the benefit of society.

## The Engineering Medal – Entrepreneurship

This award recognizes professional engineers who have demonstrated innovation, leadership, and business success through the development and growth of entrepreneurial ventures or technologies.

## The Engineering Medal – Management

This award recognizes professional engineers whose leadership and management practices have contributed significantly to engineering excellence, organizational success, and industry advancement.

## The Engineering Medal – Engineering Excellence in Industry

This award recognizes professional engineers who have applied engineering knowledge and expertise to solve complex challenges, develop advanced solutions, or achieve exceptional project outcomes.

## The Engineering Medal – Research and Development

This award recognizes professional engineers who have advanced engineering knowledge through innovative research, technological development, or scientific discovery.

## The Engineering Medal – Young Engineer

This award recognizes outstanding young Ontario engineers who have demonstrated exceptional professional achievement and leadership early in their careers, while contributing meaningfully to their communities and profession.

## Engineering Achievement of the Year


This award recognizes an engineering project, initiative, or endeavour that has had a significant and positive impact on society, industry, and the engineering profession.

## OSPE Sustainability Leadership Award

The OSPE Sustainability Leadership Award recognizes engineering excellence in advancing Ontario's circular economy through innovative, measurable, and impactful use of Recycled Crushed Aggregates (RCA) in infrastructure design, construction, and operations.

## Distinguished Lifetime Achievement Award

This award recognizes individuals who have demonstrated exceptional dedication, leadership, and long-standing service to the engineering profession and the broader engineering community through volunteerism, advocacy, and professional engagement.



# Building Equitable Energy Strategies in Ontario Municipalities

Municipalities across Canada are facing the combined pressures of climate change, rising energy costs, and the need to deliver services fairly for all residents.

OSPE's new course helps Ontario municipal leaders and staff explore practical ways to respond to these challenges by increasing their knowledge of energy strategies to reduce **Greenhouse Gas (GHG)** emissions, build resilience, and account for the needs of all their community members.

## Participants will learn how to:

- Assess local energy use and its climate impacts
- Strengthen the business case for future climate and energy investments
- Apply EDIA principles so climate actions benefit vulnerable and socio-economically disadvantaged groups

Through case studies, discussions, and hands-on exercises, participants will develop a business case highlighting the social, environmental, and economic benefits of equitable energy initiatives. By course end, municipal leaders and staff will be equipped to champion inclusive, low-carbon, and resilient community planning.

## Cost and Registration

Municipality Rate: \$125 + HST per person

Non-municipality Rate: \$165 + HST per person

## Upcoming Course Date:

June 23 – 24, 2026 (9 am – 12:30 pm)

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## **JULY 2026**

**Practical Electrical Controls and Safety  
for Industrial Equipment // July 2**

**Drinking Water Treatment, Principles  
and Practices // July 7-8**

**Writing Effective Construction  
Specifications for Project Delivery and  
Risk Control // July 13-14**

**Asphalt Mix Design and Performance  
for Pavement Durability // July 14-15**

**Principles of Soil Mechanics Laboratory  
Testing // July 23-24**

**Evaluation, Retrofit, Monitoring, and  
Maintenance of Masonry  
Structures // July 27-30**

## **AUGUST 2026**

**Applied Fluid Mechanics for  
Hydraulic System Design and  
Performance // August 4 & 10**

**Preventive Maintenance Strategies  
for Facilities // August 11-12**

**Effective Management of  
Transportation and Pavement  
Assets // August 17-18**

**Integrating Distributed Generation  
into Power Systems // August 27-28**

**Use code OSPE for a 10% discount\***

**View the full course catalogue  
[www.epictraining.ca](http://www.epictraining.ca)**

# Certificate Programs

## Autonomous Vehicles in Practice: Market Progress, Safety Engineering, and Building Public Trust

**Date:** September 15, 2026 (12:30 pm – 2:00 pm)

**Price:** Member \$50 | Non-Member \$150

**CPD HOURS: 1.5**

**ONLINE**

This workshop provides a practical, engineering-focused overview of autonomous vehicle (AV) progress, grounded in real-world deployments across North America. It explores key safety challenges, introduces standards such as ISO 26262, ISO 21448 (SOTIF), ISO 21434, and UL 4600, and outlines how engineers can design, validate, and deploy safe and trusted systems.

## Lean Six Sigma White Belt Certificate Program

**Date:** September 18, 2026 (8:30 am – 4:30 pm)

**Price:** Member \$80 | Non-Member \$119

**CPD HOURS: 8**

**ONLINE**

Designed for individuals seeking to understand the core concepts of process improvement and operational efficiency, this introductory program covers the essentials of Lean and Six Sigma, illustrating how these powerful methodologies work together to enhance processes and eliminate waste.

## Project Management for Engineers – The Essentials

**Date:** October 22, 2026 – October 30, 2026

**Price:** Member \$695 | Non-Member \$860

**CPD HOURS: 16**

**ONLINE**

This course addresses the essential tools of project management as applied to engineering projects. The course is aligned with the Project Management Institute's Guide to the Project Management Body of Knowledge (PMBOK® Guide) and ISO standards in project management. This course is eligible for continuing education credits and the education requirements for professional designations in project management such as the PMP®.

## Intermediate Drawing Interpretation

**Date:** On-Demand

**Price:** Member \$244 | Non-Member \$305

**CPD HOURS: 8**

**ONLINE**

This intermediate-level course helps participants build the skills needed to confidently read and interpret engineering drawings, including views, dimensions, tolerances, symbols, and technical annotations used in design and manufacturing environments. It provides practical knowledge that improves communication across engineering, production, quality, and project teams while supporting more accurate decision-making and execution.

## Journey to P.Eng.

### CBA Workshops: Crafting Your CBA Stories

**Date:** September 22, 2026 (1:00 pm – 5:00 pm)

**Price:** Member \$350 | Non-Member \$475

**ONLINE**

Learn to identify your engineering experience and turn it into compelling stories aligned with PEO's 34 competencies. This session covers breaking down your experience into structured "Situation–Action–Outcome" stories, techniques for mapping them to all competencies, and practical writing strategies, templates, and exercises to build your confidence and skills.

### CBA Workshops: Polishing Your CBA Submission

**Date:** August 12, 2026 (8:30 am – 12:30 pm)

**Price:** Member \$350 | Non-Member \$475

**ONLINE**

Take your drafted stories and refine them to create a portfolio that meets PEO's experience requirements. Learn how to strengthen your stories, align your experience with remaining competencies, and organize a clear, professional CBA submission.

### Prep Course for the National Professional Practice Exam

**Summer:** July 8, 2026 – August 5, 2026

**Fall:** September 23, 2026 – October 21, 2026

**Price:** Member \$350 | Non-Member \$450

**ONLINE**

Our Prep Course for the National Professional Practice Exam provides the essential tools, knowledge, and guidance to help you excel in the National Professional Practice Exam. These sessions ensure you're fully prepared to meet the licensure requirements.

### Individual Competency-Based Assessment (CBA) Coaching

**Date:** On-Demand

**Price:** \$475

**ONLINE**

Refine your Competency-Based Assessment (CBA) and boost your chances of approval by PEO or your provincial regulator. This two-hour program, delivered in two 1-hour virtual sessions, provides personalized feedback and in-session editing tailored to your CBA draft.

# Thought Leadership Thursdays

## Infrastructure Sustainability at Risk: Building a Better Tomorrow

**Date: June 25, 2026** (12:00 pm – 1:00 pm)

**Price: Member \$0 | Non-Member \$59**

**CPD HOUR: 1**

**ONLINE**

Discover how to prevent costly coating failures and strengthen long term infrastructure performance. Attendees will gain actionable insights to improve project reliability and develop stronger inspection practices that protect assets and extend service life.

## Qualifications-Based Selection (QBS) – Raising the Bar for Smarter Procurement of Engineering Services

**Date: July 9, 2026** (12:00 pm – 1:00 pm)

**Price: Member \$0 | Non-Member \$59**

**CPD HOUR: 1**

**ONLINE**

How engineering services are procured can have a major effect on the success of a project. OSPE recently evaluated the effectiveness of Qualifications-Based Selection (QBS) as a procurement method. Our review indicated that QBS resulted in less cost and schedule growth compared to industry averages and increased owner satisfaction, especially for more complex projects.

## Built for Decades, Broken in Minutes: Operational Technology in a Post-Quantum Era

**Date: July 30, 2026** (12:00 pm – 1:00 pm)

**Price: Member \$0 | Non-Member \$59**

**CPD HOUR: 1**

**ONLINE**

This webinar examines how quantum computing could impact the security of operational technology (OT) systems and critical infrastructure. It explores key risks, challenges, and practical strategies for preparing OT environments for a post-quantum future.

## Getting to Zero: Case Study for a Southern University

**Date: August 6, 2026** (12:00 pm – 1:00 pm)

**Price: Member \$0 | Non-Member \$59**

**CPD HOUR: 1**

**ONLINE**

Discover how a university developed a realistic path to net zero by combining innovative technologies, strategic planning and practical investments. Through this real-world case study, learn key lessons, challenges and opportunities that can help inform decarbonization efforts across campuses and other large organizations.

# OSPE's Engineering Licensure Readiness Program

Fully Virtual



## CBA & NPPE Preparation for International Engineering Graduates (IEGs)

The Ontario Society of Professional Engineers (OSPE) is pleased to introduce our newest bridging program, the Engineering Licensure Readiness Program, designed to support IEGs with CBA preparation, NPPE preparation and employment supports.



### Component 1: CBA Preparation

Present your international experience confidently

- 3 live virtual workshops
- 2 one-on-one coaching sessions
- Supplemental tools to support writing success



### Component 2: NPPE Preparation

Ace the National Professional Practice Exam

- Access to public NPPE course
- 4 group support sessions
- On-demand videos to support learning and more



### Component 3: Employment Supports

Advance your engineering career

- 3 one-on-one job search and career coaching sessions
- Access to OSPE employment events
- 1.5 year OSPE membership

### Program Eligibility

- Canadian Language Benchmark 7+ | Non-Canadian B.Eng.
- Permanent Resident, Citizen, Nominee, Asylum Claimant, or approved work permit
- 2+ years of verifiable work experience
- Completed/near completion of technical exams and/or eligible for NPPE

International Engineering Graduates in Ontario can get guided online support from the Ontario Society of Professional Engineers program to prepare for CBA and NPPE and progress toward licensure.

We encourage you to check our website regularly for the latest cohort opportunities and updates.

For more information and program details, visit our program website [go.ospe.on.ca/ELRP](http://go.ospe.on.ca/ELRP)

OSPE - 5000 Yonge St, Suite 701, Toronto, ON  
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Every course includes a certificate to support your professional development.

**3. Stay Current on What Matters**

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**4. Learn from Industry Experts**

Gain insights from industry and academic leaders through Thought Leadership Thursday webinars, as well as past OSPE conferences and symposiums.

**5. Go Deeper with Specialized Learning**

Access workshops and webinars designed for practicing engineers on specialized topics.

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---

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## Thought Leadership Thursdays

### Call for Speakers!

Are you a subject matter expert in an engineering field? Want to lead a one-hour webinar on a current engineering topic you care about?

Email us at [advocacy@ospe.on.ca](mailto:advocacy@ospe.on.ca)

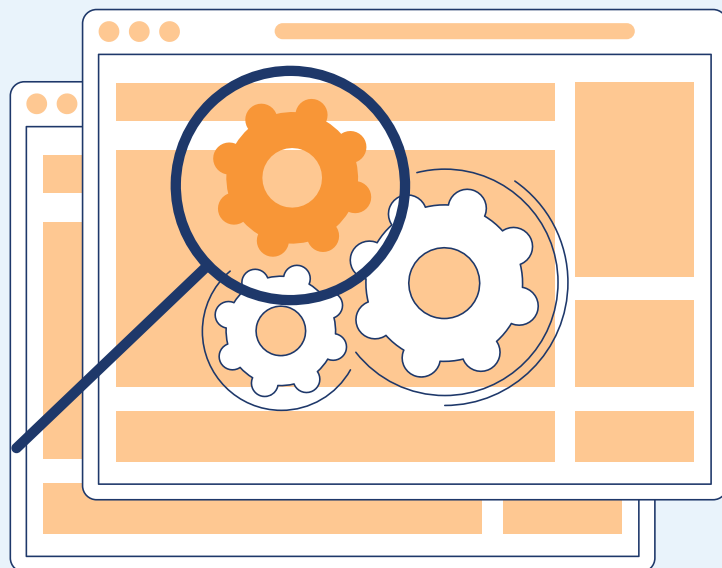
### Topics of Interest:

- Artificial Intelligence • CleanTech • Climate Change • Construction
- Emerging Technologies • Energy • Leadership & Management • Mining
- Sustainability • Engineering Profession • Research & Innovation
- Project Management • Public Safety

Note: All presenters earn CPD credits for their efforts.

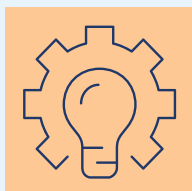
# Want to see your work published in an upcoming issue of the Voice?

We do too, which is why we are sharing some information on what we are looking for and how you can best share your research and perspective with the engineering community.



## **Article Length: 800-1500 words**

Anything longer is probably best published as a white paper (although an executive summary could be included in the magazine to promote it).



## **Subject Matter: Something Newsworthy**

Submissions should emanate from research and/or technical work that is engaging and interesting to an engineering audience. Common aspects to consider include the economic, social, and/or regulatory impacts of particular areas of practice.



## **Audience: Engineering +**

Our magazine is distributed directly to all our members and to an additional 30,000+ members of the engineering community. That is a broad audience, and we encourage submissions to be written in a way that is accessible to all. Subject matter expertise is demonstrated as much by the ability to educate as it is by depth of knowledge.

We invite all members to submit their interest in having work published by sending a brief message to [marketing@ospe.on.ca](mailto:marketing@ospe.on.ca). Please be sure to include your name, a brief bio, and an overview of the work you wish to submit. There is no need to submit the finished work as part of your declaration of interest.

# MEMBER PROFILE



## Karen Wonders

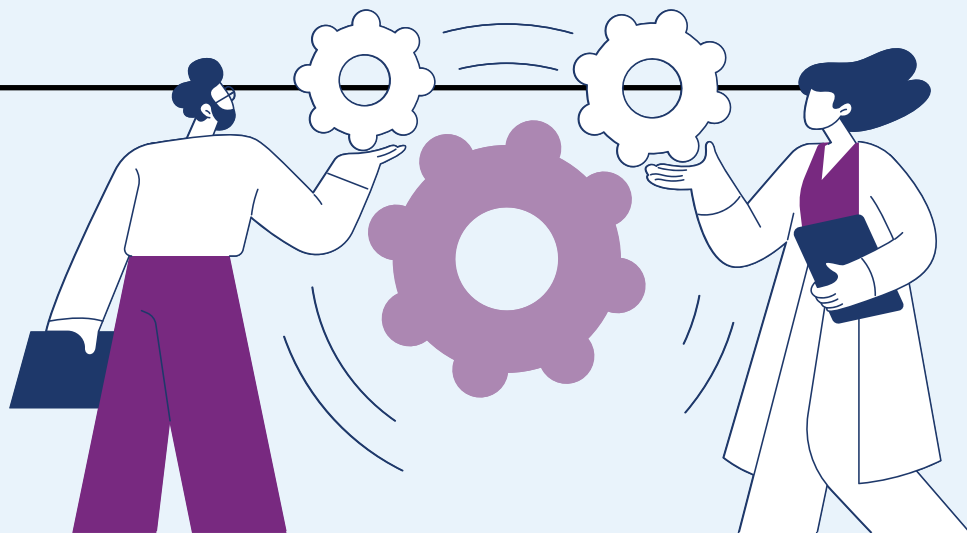
OSPE Member and volunteer, Karen Wonders spent over 20 years in the engineering industry before becoming the President of **LALUZ Consulting**, where she works as an executive leadership coach. Karen partners with engineers who are ready to evolve from subject matter experts to transformational leaders, focusing on emotional intelligence, communication, influence, and authentic leadership. Karen also works with entrepreneurs to bring strategic clarity to their businesses. Karen shared with OSPE how engineering principles shape her work, the value of engaging with the engineering community, the engineering issues that matter to her, and her advice for the next generation.

### How do you apply engineering knowledge and principles to your job or volunteer work?

Engineering has taught me the value of structured thinking in unstructured situations. Leadership is messy and human, but having a framework to work within makes it less overwhelming for my clients. I bring methodology to something that can feel abstract. And the discipline of continuous improvement, which every engineer knows well, is at the heart of how I coach and how I build my own business. We measure progress, we adjust, and we keep iterating until the approach works in the real world, not just in theory.

### Why are you an OSPE member/why do you think the work OSPE does is important?

Engineers shape the infrastructure, systems, and technology that Ontario depends on, yet the profession often lacks a strong enough voice in the rooms where policy decisions are made. I joined OSPE because I believe engineers should be at those



tables, contributing the technical perspectives that leaders need to make better decisions.

When different perspectives are present, we collaborate better, challenge assumptions, and ultimately get more done. OSPE's commitment to equity, diversity, inclusion, and accessibility, including their initiative to advance flexible work for women and caregivers in STEM, puts that belief into action.

### What issues in the profession are most important to you?

Engineering programs produce excellent problem solvers, but very few engineers receive any formal leadership training. I believe emotional intelligence deserves to be treated as a core professional skill for engineers. The ability to listen, build trust, manage conflict, and communicate with influence is what separates a strong technical contributor from someone who can lead a team, a project, or an organization.

Another issue I care about is access. Not every engineer has the same networks, mentors, or visibility to grow into leadership opportunities. I want to see that change, and it is one of the reasons I mentor, volunteer, and coach.

### What advice would you give your younger self?

Forge your own path instead of trying to walk in someone else's footsteps.

Early in my career I read many biographies and leadership books from prominent figures and tried to emulate them. It was exhausting because it was not me. I was like someone trying to step into another person's tracks after a snowstorm, their stride was longer, their pace was different, and I was so focused on matching their steps that I never looked up to see where I was actually going.

I felt a shift in my life when I stopped emulating and started adapting what I learned to fit who I actually am.

GENDERED MICROAGGRESSIONS IN ENGINEERING

signal that engineering is made for men only

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### DONT

Hey, what is taking you so long? Are you not cut out for field work?

I don't have the right sized gloves, but they'll judge me more if I speak up. I'll just deal with it.



### DO

I noticed you were struggling with the task. Do you have all the equipment you need?

The gloves they gave me are industry standard, and too big for me.

No problem, let me make sure you have access to all the right fitting equipment.



**50% of women do not have PPE that fits them properly.**

**CHOOSE TO BE AN ALLY** – see safety through a gendered lens.



LEARN MORE ABOUT GENDERED MICROAGGRESSIONS [SCAN HERE](#)

This project has been funded by Women and Gender Equality Canada  







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