

# **P.ENG.** **designation** a lifetime of value

Defining oneself as a P.Eng. is a point of pride for thousands of individuals across Ontario. Following is a sampling of PEO members and those on the path to licensure who speak out about what the P.Eng. designation means to them and why they value it.

**By Nicole Axworthy and Jennifer Coombes**

## CHRIS RONEY, P.ENG., BDS, FEC



When Chris Roney, P.Eng., BDS, FEC, graduated with an honours BSc degree in civil engineering from Queen's University, the only thing he had on his mind was the goal of obtaining his P.Eng. "After you graduate, after the experience, to finally be awarded that licence... I wanted that so much," he says. "But when the package arrived from PEO with my engineer seal in it, it was the scariest thing in the world to seal that first drawing, because of the gravity of what that really meant—how I can't be wrong. As engineers, we take responsibility for our work, and people rely on it to be right."

A third-generation engineer and designated building design specialist, Roney has been exposed to the value and responsibility of engineering all his life. Today, he heads Roney Engineering Ltd., a Kingston-based structural engineering firm his father started in 1970. He says his engineering licence is essential to his practice. "I value the licence greatly because it allows me to do what I do," he says. "It's not a right. It's not an entitlement. It's not a membership in a club. I see it as an incredible privilege because I'm given this licence that not everybody has."

Roney relates the value and responsibility of the P.Eng. to a structural engineering job he once did at a seven-storey residence building at Queen's University. His job was to create a new room in the basement, but one of the main building's support columns was right in the middle of the space. "Obviously they wanted to cut that column off, but to do that I needed to come up with an elaborate design to transfer that load elsewhere, and it consisted of putting up some new beams, attaching them to the columns, pre-stressing them, putting in new support posts, and so on," Roney explains. "And the last step in the process was to cut that column. Well, the iron workers who actually had to do that were fine up until that point. They asked: 'Are you sure it's all okay?' So what I did to give them confidence, I went down there and I stood right under it. Then I said, 'Now you cut it.'"

It's that kind of confidence in the quality and standards that are attached to the P.Eng. licence that adds an additional element of personal responsibility for the safety issues surrounding Roney's own work. "If you want to talk about taking responsibility, well, maybe I stepped it up a little bit and took life-ending responsibility for the accuracy and the correctness of all those calculations," he admits.

Roney firmly believes the licence is an indication of competence and professionalism that each engineer who obtains it must live up to. Likewise, the public at large should recognize it as an indication of responsible engineering. "When you talk about the value of the licence, certainly from my perspective, the most important thing is to ensure society values the licence and what an engineer brings to the table," Roney says. "The



licence is something that we earn. Society has given us that privilege, and society at large can take it away if they lose that confidence in us. We have to be very diligent and earn that confidence.”

To Roney, being licensed shows that he is part of a group of qualified people with a moral and ethical responsibility to the public by virtue of their specialized knowledge, training and skill. “I know so many engineers who don’t have to have a licence but they certainly value being a part of the community of engineers. But that is not what a licence is all about,” he says. “With me, I use my seal every day. I do calculations. I design structures. I give opinions. And people depend on me being right. If I’m wrong, someone gets hurt, or it costs someone a lot of money when something goes wrong.”

## PARVA ALAVI, P.ENG.



When Parva Alavi, P.Eng., immigrated to Canada as an unlicensed engineering graduate from her native Iran, she didn’t realize the value of a professional engineering licence. With a master of engineering from the University of Leeds, UK, she came to find out the P.Eng. designation represents the highest standards of professionalism and value—it tells employers its holder has the knowledge, experience and ethics to meet the highest professional expectations.

“I think anybody who is a member of PEO has more credibility,” says Alavi. “And that’s one of the reasons I wanted to get my licence.”

But obtaining her licence was a goal she wouldn’t accomplish until almost 15 years later. During that time, Alavi had three children and was hired as a fuel test engineer at Atomic Energy of Canada Ltd. (AECL). After obtaining her licence in 2007, Parva gained experience and insight working in various systems of CANDU reactors, including conducting qualification testing of a new design of the fuel bundle, and leading a team of engineers and trades to execute the installation of the modified design of the CANDU annulus gas system.

Alavi is a firm believer in the value of continuous improvement. “In my field, it wasn’t a requirement to be a P.Eng.,” she explains. “I became a professional engineer in 2007 because I decided I wanted to enhance my career and also [explore] other aspects of my career that required a professional engineer licence.”

And, in particular, she says, she wanted to be recognized as a valuable member of society. “Before that, it was just an engineering job for me,” Alavi says. “I have a good attitude toward my work, but by reading about law and ethics [for my professional practice exam], I realized how important my engineering role can be to society.”

Alavi believes the ability of a P.Eng. to act ethically through PEO’s Code of Ethics, and to carry out the desire to do what is right, highlights the value of the licence to the public. As professional engineers, she says, we have a clearly defined duty to society, and it is important that we take a leading role in defining and supporting ethics within science and technology. Ethics is a thread that binds the practitioner, the profession and the public—and that is where PEO comes in.

“It was very helpful to know there is an association that deals with the issues if there is any crossing of the rules of ethics and law,” Alavi explains. “I didn’t know the role of PEO before. I didn’t know at the time where to raise my issues, but now I know there is an organization that is a backup for engineers if any issues arise.”



**R**ajeev Roy, P.Eng., moved to Canada in 1998 and is now the manager of transit management systems with York Region Transit. He sees becoming licensed as an engineer in Ontario from the unique perspective of the internationally trained.

“When an immigrant comes to a new country it means they’re struggling for a job and that was the case with me. For the majority of engineering jobs, being a P.Eng. is a requirement, so certainly that forced me to look into getting the licence,” Roy says.

When he arrived in Canada, Roy had a bachelor’s degree in civil engineering from the Indian Institute of Technology in Delhi and nine years of experience working with Indian Railways, but decided to pursue a master’s degree in transportation engineering at the University of Waterloo.

He received his P.Eng. in the fall of 2001 after completing one year of Canadian experience with consulting firm IBI Group, where he designed traffic-management systems, fare-collection systems, toll roadways, and variable-message signs for use on 400 series highways. “For the internationally trained, finding a P.Eng. to work under for a year is difficult. I was lucky in that way.”

It was his work on a project at IBI Group to introduce the VIVA rapid transit system that led to his current position at York Region Transit. “York Transit was looking for someone who could support the system after the initial implementation, so I decided to take over responsibility for operating and maintaining the system. So I really can’t blame anybody—I designed the system and now I’m maintaining it,” he says with a laugh.

Roy admits that although he needed a licence to do the kind of design work he was doing at IBI, he also wanted to add to his professional profile. “The name itself—professional engineer—carries a value in the industry,” he explains.

Another reason Roy wanted his licence was independence. “If you’re designing something and you have to stamp the drawing, if you don’t have a licence then you’re handicapped. You’re left looking for somebody who can review and stamp your work, which is a duplication of effort. On the other hand, if you have your own licence and you’re confident that you’ve done the right thing, you can stamp it yourself.”

He adds: “At IBI Group, I was using my professional skills doing design work, but since about 2005, I haven’t used my engineering skills a lot.” Nevertheless, he says, the licence still comes into play even though he is no longer directly applying engineering principles. “I feel that being an engineer gives me a totally different perspective for anything I do. I see things from a practical point of view, and from the point of view of how it’s beneficial for the customer. Also, for me, it makes me think about the safety of the public I’m going to service with whatever work I’m doing—whether it’s the design of a bridge or of a culvert, or a roadway system. It gives me a sense of responsibility.”

Roy says he’s been lucky to work for organizations in Canada like IBI and York, where ethical practices are of paramount importance, adding he’s “never been asked to do something that was unethical.”

Certainly for immigrants, he says, it’s very important to become a P.Eng., because it makes people more marketable and allows them to be independent.

## THOMAS HUYNH, P.ENG.



**T**homas Huynh, P.Eng., has the safety of the public in his hands every day—and he takes that very seriously.

After graduating in 2003 from the University of Toronto's computer engineering program, Huynh worked at a web startup company before joining Giffels in January 2008, a firm that was subsequently purchased by multi-disciplinary consulting company IBI Group.

As a control systems engineer, he designs the control of runway lighting systems that air-traffic controllers and maintenance crew use to guide planes in for landing and take-off, and the software and controls components of airplane deicing systems.

"The intelligence we build into these systems has to meet airport standards—the FAA, Transport Canada and the International Civil Aviation Organization—as well as communicate with other systems at the airport, so there are a lot of standards and codes that I have to be aware of in everything I do," Huynh says.

Also, he adds: "You're constantly thinking, 'You've made a design, but how does your design affect the system?' You don't want to disrupt critical airport operations and communication systems with your work. I feel a lot of responsibility, especially working in a dangerous environment like an airport, and the licence helps me be more aware of my role in protecting public safety."

It was after working at Giffels for a few months that he was licensed in April 2008. For Huynh, choosing his career was easy. "In high school, I was interested in computers, electronics and software, so studying engineering was a natural extension of what I wanted to do."

Choosing to become licensed was almost as natural, even though for a while after graduation, he says, he wasn't really doing engineering. "For someone with my background there are definitely more software, programming and IT types of jobs out there that don't require you to be a professional engineer. But after working for four-and-a-half years, I got an opportunity to work at a real engineering consulting firm. Although I don't have to be licensed for my job, I guess I'm one of the rare computer engineers who has a P.Eng."

He adds that once he was working at IBI Group, "pretty much every engineering graduate had a P.Eng. so I looked around and said, 'Okay, I better get one, too.' But even if I hadn't gone to work for IBI Group I still would have become licensed."

### PROMOTING THE LICENCE

**P**rofessional engineering is about more than just licensing, legislation and liability. It's also about pride, respect and collegiality. This is the message PEO is highlighting as part of a new communications plan to raise awareness of the value of the licence among target audiences, and to foster professional pride among the more than 73,000 professional engineers across Ontario.

This plan is just one part of what is known as PEO's Big Audacious Goal to become the global leader in professional self-regulation that responsibly improves the quality of life for all. For the last several months, PEO's leadership team has been hard at work examining issues that will impact the association's ability to achieve this goal.

One of the main issues: Does PEO simply let those who are interested in licensure come to them when ready, or should PEO take a more proactive role in their recruitment? At its workshop last June, PEO council decided the association should focus more attention on recruitment of applicants for licensure and retention of its licence holders, which requires promoting the need and process for, and increasing the perceived value of, the P.Eng. licence in Ontario.

"Our goal is to raise awareness of the route to P.Eng. licensure and foster pride in the designation among international engineering graduates, engineering students, employers of engineers and unlicensed graduates through the use of several diverse communications tools," says PEO Communications Manager David Smith. In doing so, the regulator plans to broaden the engagement of PEO within the

## RUTH-ANNE VANDERWATER



Although Ruth-Anne Vanderwater has just completed her master's degree in electrical and computer engineering at the University of Waterloo, the goal of becoming licensed is firmly in her sights.

As Engineering Student Societies' Council of Ontario (ESSCO) president during the 2007-2008 school year, Vanderwater was exposed early to PEO and, in fact, becoming licensed has been the plan since her first term at Waterloo where, she says, "it was instilled in me that if you wanted to call yourself an engineer, you needed to be licensed."

But, it's only been recently that she's felt ready to enter the job market to fulfill the experience requirement of her licence.

"After I finished my ESSCO presidency, I was just finishing my undergrad and I decided to continue on with my master's because I wasn't quite ready to get a job. But now the job hunt starts," she says. "Eventually I'd like to move into project management because I really like the people side of things. But I know that to get my P.Eng., I need to have a significant amount of technical experience and I want to get that. That's very important to me."

As for her personal reasons for wanting to become licensed, she says, "the first thing that comes to mind is that I'd like to be able to participate and contribute to PEO and you need the licence to do that to any large degree. But I also think that it shows a commitment to the profession."

"Depending on the job I end up in, my licence may not be absolutely necessary. If I'm doing a software job like programming a video game, they're probably not looking for someone who has their P.Eng. But if I worked for a company like MD Robotics, which does the Canadarm, the lives of people are at stake," she says.

However, Vanderwater found the desire to become licensed wasn't shared by many of her classmates: "Some of my friends would ask why they should spend all that money to get licensed if the safety of the public is not in their hands on the job. But I always saw it from the point of view that I'm serious about the profession and, for me, it's just the right thing to do."

When asked what advice she has for engineering graduates who are considering licensure, she said: "Generally, I would encourage people to get licensed. If you go through an engineering program, you want to follow it through and get licensed. To me the licence is the final step in that process. You want to say to yourself, 'I've gone through the engineering education, and now I want to actually call myself an engineer.'"

profession and to introduce new communications programs and activities, involving print advertising, trade shows and events, social media and direct marketing. "Ultimately, we hope our efforts will increase the number of P.Eng. licence applications by 15 per cent over five years among CEAB and non-CEAB graduates," Smith adds.

The key messages of the communications plan include promoting PEO's Engineering Intern Training Financial Credit Program and the provisional licence; raising awareness of the benefits of early application and of the career enhancement possibilities; and fostering the concept of licensure as the mark of a professional. The plan also includes communicating recent changes to the *Professional Engineers Act* that will have an impact on licence applicants, in particular the removal of the requirement that

applicants be Canadian citizens or have permanent residence status before they can be licensed.

"Many opportunities exist to increase the profession's accountability to the public and the value of the licence to our members," says PEO President Diane Freeman, P.Eng., FEC. "Promoting these messages means engineering students as well as professional engineers can be proud of belonging to a profession whose members have gained an international reputation for value and excellence, and share a commitment to enhance the quality of life, health, safety and well-being of Canadians. With the P.Eng. comes responsibility, but its holders can also enjoy the privilege of knowing they have gone the distance, and earned the right to call themselves a professional." Σ