

PROFESSIONAL ENGINEERS ACROSS ONTARIO SPEAK OUT ABOUT THE P.ENG. LICENCE—WHAT IT MEANS TO THEM AND WHY IT'S IMPORTANT.

For engineers in Ontario, the P.Eng. licence is the currency to practise in their field as required by law. But after they've passed the exams and met all the requirements, what does the licence really mean? What's in it for them and what's the value for their clients, colleagues and the public at large? Here, a sampling of Ontario's 65,000 professional engineers share their own stories—and give us some answers.

BY KAREN HAWTHORNE

PRIDE AND PROFESSIONALISM



AUTHORITY TO PRACTISE

Angelo Boschetti, MEng., P.Eng.
Leader, Investment Decision Modelling and System Performance, Toronto Hydro-Electric System Ltd.

The word “engineer” to my ears has an empty ring to it unless it is accompanied by the word “professional.” Without the authority to practise, is one even an engineer? Our profession is not only about studying the pure sciences; it is about applying the sciences in a creative way to the world. The ability to practise is part and parcel of the definition. Without my licence, my education would have been an unfinished work.

My appreciation for my licence grew the most when I was away from an engineering environment during my six years of service in our energy marketing affiliate. The energy marketing industry brought together people from many different disciplines and walks of life. As is widely known today, due to scandals at some very large firms, not all in that industry performed their duties ethically. Behind those specific individuals and companies there was a breeding ground of greed. Looking back, the P.Engs that I knew acted ethically—it highlighted the value of the licence to the public, which I had not thought about before.

In my engineering work for the previous seven years, the safety of the public and professional conduct was of paramount importance. It was expected and beyond question. The desire

Society has a duty to give us exclusive use of the title, which should be the only avenue for practice.

to carry out one’s duties ethically stayed with us even when we were in non-engineering environments. We are who we are, night and day, engineering position or not. The public, I think, would receive tremendous comfort knowing that our members, wherever they are and whatever they are doing, carry with them the constant desire to do what is right.

We are P.Engs at all times and in all places. We cannot turn it off and our conduct is always measured to the high standard we have set for ourselves. I think our responsibilities include being professionally ethical and technically competent. I believe our members are both, but I think we also have the responsibility to demonstrate this in a more transparent fashion than we have in the past to ensure that the perception in the public’s eye matches reality.

My greatest concern is that powerful interests sway society into thinking that “engineer” has a meaning outside of “professional engineer.” Society has a duty to give us exclusive use of the title, which should be the only avenue for practice. That way it creates the desire and the fear of justice to stay focused on our responsibilities. This is the benefit we receive as a result of our responsibilities to the public. Professional engineers need to be respected for the great value they bring to the public and the public has a duty to protect it.

Angelo holds BAsC and MEng degrees in electrical engineering from the University of Toronto and has been licensed since 1993. Since 1990, he has been with Toronto Hydro and has had positions in both its distribution utility and energy retailing company. In his present role, he is responsible for the development of investment decision models to achieve system performance objectives.



Pamela Russell, P.Eng.
Director of Transportation and Waste, County of Northumberland, headquartered in Cobourg

The designation of professional engineer is a lifelong privilege and responsibility. Dealing with government agencies, other professionals, and the public in general, a professional engineer typically has added credibility in the workplace.

My professional engineering designation has been a major asset to me throughout my career. I believe that it made it easier for me to re-enter the workplace after taking time off to stay home with my children when they were young, and has helped me to be accepted as a female in a male-dominated field. It was absolutely invaluable when I owned and operated a consulting



Pamela graduated from Queen’s University with a degree in mechanical engineering in 1977 and is currently the president of Municipal Waste Integration Network, a national organization dedicated to providing quality waste management services in the public sector. For the County of Northumberland in southeastern Ontario, Pamela is responsible for more than 500 km of arterial roads, 100 bridges, two landfill sites, and a state-of-the-art recycling facility visited by delegations from across North America and abroad.

business prior to taking on my current position with the County of Northumberland.

There are lots of jokes about engineers being overly focused on technology and being an “old boys’ club”; however you cannot argue that professional engineers garner a lot of respect in the workplace. That respect is not just due to the fact that engineers have the ability to understand some pretty brutal technical concepts, but also because there are stringent responsibilities that go along with using the P.Eng. designation. Most engineers will ensure that they can really stand behind a document before they will allow their designation to be associated with it—the penalty of discipline by PEO is too severe. That’s why it is important that we require that reports and documents be certified by a professional engineer whenever it is relevant.

There is an inherent integrity that goes along with the use of the professional engineer's designation.

Engineers have a responsibility to provide professional and competent engineering services. Whenever we're using the professional engineer's designation, it is important that we consider if the document we are endorsing—whether it is a letter or an engineering drawing—would withstand the scrutiny of independent public review. Some of the key tests that I consider before I'll include my designation on a document are whether the information is fair and true, protects the public welfare, and is based on accurate information and judgment.

There is an inherent integrity that goes along with the use of the professional engineer's designation. The Code of Ethics states that professional engineers have a duty to protect the public welfare, even above their duties to their employer or client. An engineer should never compromise that responsibility in order to promote more personal interests. In return, our clients and employers should recognize the responsibility that accompanies the engineering designation and never pressure any member of the profession to overlook or compromise their main responsibility.

SERVE & PROTECT



Jeff is the sole proprietor, principal and employee of Mark Engineering. He has been an engineer for 35 years and has run his own firm for the last nine. He is the current chair of the York Chapter of PEO.

Jeff Mark, P.Eng. Principal, Mark Engineering, Newmarket

The reality is that I wouldn't be able to do the work that I love to do if I didn't have a licence.

I am fortunate that I run my own business. It is a "one man show" and I am mostly involved in transportation planning, although I do get involved in other aspects of transportation engineering at various times. For the most part, transportation planning and traffic impact studies really don't need to be done by an engineer. Like most planning exercises, these studies look at what might happen and what the impacts might be. Safety is always a consideration, but it is not usually the focus of such studies. However, most municipalities and some clients want the reports signed and sealed by an engineer so that they have the assurance that the "public" and themselves have been provided with reports in which they can have confidence.

The "P.Eng." says that the engineer will do his or her best to "serve and protect" all concerned. And that is one of the responsibilities of being licensed—you are to do your best. And we do our jobs well. In 2003, there were about 26,500 lawyers in Ontario and there were 61 disciplinary decisions made that year. If the same ratio were applied to engineers, there would be about 138 complaints made about 60,000 engineers in Ontario. But there were only 15 disciplinary decisions by PEO in 2003. So we must be doing our jobs well.

One of the responsibilities of the public is to recognize that P.Engs are highly responsible and competent people. This recognition does occur, but the public does not want to pay for this. Many municipalities have replaced P.Engs with technicians and technologists, because it is easier on their budgets and they can get most of the P.Eng. benefits for less money. They will hire an engineer to assist on a specific problem when it is perceived that an engineer's expertise and experience is needed. In many cases, the problem might not have occurred if there had been an engineer on staff full-time. (Dare I mention Walkerton?)

In the private sector, customers will sometimes ask a number of engineers to submit proposals for work and then pick the lowest priced proposal. In most cases, wise engineers specify in detail what they are going to do for the cost so that when the client asks for something more, they can say that the requested work is not included in the scope of work and there will be additional costs. Many clients don't like this, but the truth is you get what you pay for. I tend to avoid providing a proposal if I know that the client is trying to get the lowest cost. It is not worth the hassle for me or the client.

So what is in it for me? The licence permits me to do the work I love. As a sole practitioner, I can work for clients I like, I have control over the hours I work, I have a lot of fun doing what I do, and people pay me to have fun.

What better job can you have?

The reality is that I wouldn't be able to do the work that I love to do if I didn't have a licence.

The "P.Eng." says that the engineer will do his or her best to "serve and protect" all concerned.

Suja John, P.Eng.
Ontario Regional Director, Canadian Institute of Steel Construction, Willowdale

I am proud to be identified as a professional engineer. I have been a P.Eng. for the past few years. To be a professional engineer with the designation was more of a necessity when I worked with a structural engineering consultant. As a structural project engineer in the consulting field, I was required to prepare drawings and reports and to sign off on them. In my current position at the CISC, I do not have to seal any documents, but having my P.Eng. provides credibility and commands respect, especially as a woman in a male-dominated field.

The public's perception of a P.Eng. is high and there is significant expectation of high standards of ethics and conduct from his or her work and overall performance.

The public recognizes that professional engineers look out for the public's interests as would any other professional. Society can rely on a profes-

sional's work and judgment; they can trust us to be ethical and to conduct ourselves professionally.

A professional engineer is expected to abide by the Code of Ethics and work with a degree of professionalism—we are expected to be competent in our area of engineering and have a high degree of personal honour and professional integrity. We have a clearly defined duty to society through the Code of Ethics and, as such, public welfare is paramount in our day-to-day duties. I feel that as a licensed, self-regulated professional, I automatically assume the above responsibility in the conduct of my profession.

Society has a significant responsibility to recognize a licensed professional and the work he or she does. Society at large has the option to use the services of a licensed professional or an unlicensed practitioner. As in any field, the services rendered by a licensed professional come with a premium and certain expectations. It is very important that society recognizes this fact and views the work of a licensed professional accordingly.

Having my P.Eng. provides credibility and commands respect, especially as a woman in a male-dominated field.



Suja graduated from the National University of Singapore with a BEng (Civil). As the Ontario regional director of CISC, Suja is responsible for CISC marketing and regional activities in the steel construction industry. She currently volunteers as a member of PEO's Experience Requirements Committee (ERC).

VALUE & BENEFIT

Jennifer Neate, P.Eng.
Senior Process Engineer, Product and Process Engineering, Griffith Laboratories Ltd., Toronto

My decision to apply for the P.Eng. designation after graduation had little to do with my current employment, as it was not required as part of my job function in product and process engineering at Griffith Laboratories. In fact, to my knowledge, there are relatively few professional engineers in the food industry as a whole.

I wanted my designation as I felt it was the next logical step in my journey, and meant that I might become more valuable as an employee and more marketable should I wish to change employers.

I became involved with PEO in the EIT program, and subsequently the York Chapter Executive Committee, and began to learn more about the engineering community. My experiences led me to further understand the significance of the designation and the implications for those engineers offering services to the public.

I now feel that the designation is not just a step in an engineering career path, but rather an essential means of protection for both engineers and the public they serve. With the ever-expanding scope of projects and the integration of multiple engineering disciplines, engineers are challenged to stay current in a far wider field of practice than previously expected. The designation serves as a safeguard, ensuring the competence of the members and promoting the profession itself. I hope that in the future, we might see better P.Eng. representation in those industries not traditionally closely linked to the profession, such as the food industry.

It is important that society take on more responsibility for the protection and promotion of the designation. Industry leaders should work to perpetuate recognition of the competence and expertise implied by



Jennifer graduated from the University of Guelph with a major in biological engineering and a minor in food engineering. She now works for Griffith Laboratories Ltd., a food ingredient supplier in Toronto, and volunteers as electronic communications director for PEO's York Chapter Executive Committee.

the licence. Employers in all sectors should encourage employees to obtain and maintain licensure. The relevance of the designation in today's working environment has never been more apparent.

As licensed professionals, we too have responsibilities. We must strive continuously for self-improvement and follow new developments impacting our industry. We must take an active role in the regulation of our profession. We must also make an effort to inspire future professional engineers.

Three years ago, I became involved in National Engineering Week as a presenter to students at Toronto libraries. My goal is to make some contribution to the enrichment of the P.Eng. title and expand on the traditional views of engineers as bridge builders and train operators. Imagine: "Engineers make advancements in the field of medicine, build movie sets, and develop healthy and delicious foods." It is the responsibility of every engineer to demonstrate how our profession touches all facets of society and has evolved into much more than a rigidly scientific practice, but also a humanitarian, creative and groundbreaking adventure.

I now feel that the designation is not just a step in an engineering career path, but rather an essential means of protection for both engineers and the public they serve.

Now in his third year at the University of Waterloo, Rahul is vice president of the Engineering Students Societies' Council of Ontario (ESSCO), a student ambassador and Frosh Week director, who plans on pursuing his P.Eng.



Rahul Bhardwaj
Third-year Electrical and Computer Engineering Student, University of Waterloo, Waterloo

Being an engineering student is not an easy task. There are questions I have about my future and where I will be once I get handed that engineering degree.

However, like every student, I also wonder whether to get licensed by PEO. I want to get my P.Eng. because to me, it's more than just a licence that says, "I know what I am doing." It tells me that I have the knowledge and experience to serve as an engineer, to serve as a professional and to serve as the one who won't duct tape that crack in the wall just 'cause that worked in school. It tells the public that I have accountability toward them regarding my ethical practice and I will adhere to standards when delivering my services. It gives me integrity and independence to follow the guiding principles of my profession, proud as I am, and always consider public interest and safety over employment and design demand. All this defines what an ideal professional engineer should be.

We must recognize that engineering is a field so integrated with the safety and welfare of the public that only individuals who meet the standards of education, training, experience and ethics should be allowed to practise professionally. As engineers, yes, we have an obligation to society to not endanger but help progress the world around us and I believe the public expects that value and commitment from us. However, professionals should expect society to recognize their professional standing and their work in the profession.

As much as it is a professional's job to follow his or her guiding principles, it is also soci-

ety's job to enforce those principles by placing a higher importance on the competency of all professional engineers and hold them accountable for their services. Only through added feedback can the term "professional engineer" evolve on technical and ethical grounds to better serve society.

From personal experience, I know that no matter how much engineering "ethics" is outlined in our curriculum, students will sleep or skip when the professor starts talking about it. Technical courses gain the same response; many students do pass but don't really understand the industry practice and standards. The reality is that none of us has a core grasp of the huge responsibility that comes with the engineering degree, and this enforces the fact that as a professional we will or be licensed to say that "we do understand."

It is imperative that the image of the professional engineer be protected at all costs and, as such, always guide a licensed professional to present to the public a competent and ethical image of themselves. I may not hold the view of the big picture because I haven't even applied for my P.Eng. yet, but I do know that I am glad a governing body and legislation are in place that lay down the foundation of regulating the engineering profession. This gives me the assurance that when I become licensed, I will strive to represent an ideal professional engineer in every manner.

I want to get my P.Eng. because to me, it's more than just a licence that says, "I know what I am doing." It tells me that I have the knowledge and experience to serve as an engineer, to serve as a professional...

Michael Price, P.Eng., MBA
Deputy Registrar, Licensing and
Registration, PEO, Toronto

The culture in the electrical engineering program at McMaster University presumed that all graduates would become licensed as professional engineers. We also had several professors who were actively involved with the IEEE and encouraged membership in that organization. We also had a number of teaching assistants who were displaced from jobs during the recession of the early '80s and had returned to school to upgrade their skills. This taught me that the more formal recognition achieved—including the status that the P.Eng. title could provide—the better the career opportunities.

One of the challenges I faced at job interviews after graduation was a lack of recognition of the four years of engineering curricula included in the five-year program. It soon became clear to me that the formal recognition of a P.Eng. would be more valuable than having only an undergraduate degree. This point was further emphasized when I found myself working at Ontario Hydro in a department that consisted of more than 90 per cent professional engineers. The pursuit of my licence was the obvious direction for any professional potential that I might have.

Later, when I moved from Ontario Hydro to Burlington Hydro as the assistant distribution engineer, the need for a licence was just as apparent. Both organizations would not allow employees to use the word “engineer” in their title unless you were a licensed professional engineer.

I completed my P.Eng. and an MBA in 1990 and promotional opportunities followed. I became the general manager and secretary of the Haldimand Hydro-Electric Commission in 1994. Through expansions and amalgamations, this position evolved into president, and CEO of Haldimand County Utilities and its three subsidiaries. This level of responsibility, in conjunction with my licence, led to my offer to join

PEO as the deputy registrar, licensing and registration, in August 2003.

My career has continually progressed into positions of higher authority and greater responsibility with potentially better remuneration that can be directly linked to the P.Eng. licence.

Other professions have worked hard over the last 20 years to promote the value of certification and licensing to the public to improve opportunities and remuneration for members. This is one area in which the engineering profession is regrettably falling further and further behind. Given the roles and level of responsibility that engineers take in our society, we must do more to stop this perception.

Anyone who chooses to seek out professional advice, either from a medical practitioner, a lawyer or an engineer, should be concerned with credentials. We have noted a number of situations in the news over the last few years where people were harmed by seeking the advice of non-accredited individuals. Perhaps the profession of engineering needs to launch a serious ad campaign to address the fact that choosing a non-licensed engineer to do work for you can directly affect your personal safety or the value of your assets. This type of campaigning has worked for other professional associations. PEO's mandate is to protect the public; therefore, we must take on this educational role. However, this is a double-edged sword. Once we have made this information more readily available, the public needs to accept the responsibility of validating a company's or individual's credentials.

Personally, I believe that holding a professional licence and accepting the responsibility of what that entails continues to remind me about the importance of behaving with integrity in both the work that I produce, as well as in my dealings with people on a private basis. If that is the effect that licensing has on all of our members, then how can you begin to quantify the value of the P.Eng. licence?



Michael holds a bachelor of engineering and management degree in electrical engineering and a master's in business administration from McMaster University. He joined PEO in August 2003 after a career in the hydro industry.

My career has continually progressed into positions of higher authority and greater responsibility with potentially better remuneration that can be directly linked to the P.Eng. licence.

We have noted a number of situations in the news over the last few years where people were harmed by seeking the advice of non-accredited individuals.



Matthew Xie, P.Eng., MBA
Platform Manager at Multimatic Inc.,
Markham

After I immigrated to Canada in 1987, I worked hard at the University of Toronto to graduate with honours. I accumulated some experience and nervously received a P.Eng. certificate in a Scarborough basement in 1995. One guest welcomed me to this “well respected profession.” I asked myself, “Why does PEO welcome a new member in a basement instead of in the restaurant in the CN tower?” The search for the answer has led me to active participation in PEO affairs.

I believe that a P.Eng. designation gives me some distinct advantages: recognition from society and other professionals, a perceived image of honesty and integrity (especially after the Enron case), a sense of achievement and belonging to a fine group of people, and the privilege to work with other professional engineers to reform our organization to be more flexible and relevant to society and its members.

Our society also benefits from self-regulated engineering professionals. They can expect consistency of the quality of all practising professional engineers, and the high ethical standards imposed on all regulated professional engineers. In terms of improving our self-regulatory body, standardized admission at PEO would be able to ensure all P.Engs receive recognized education and gain acceptable practical experience.

Matthew spent 19 years in Guangzhou, China, before he came to Toronto in 1987 to learn English and become part of the engineering community. Today, he works for Multimatic Inc., a designer and manufacturer of automotive door hinge systems, and serves as Treasurer of PEO's York Chapter. As a member of PEO's Experience Requirements Committee, Matthew has interviewed many international engineering graduates.

How can a P.Eng. serve society better? One way is to take the trial and error approach systematically and consider the public welfare as paramount. Engineers should evaluate their designs and solutions to protect the public. For example, an automotive engineer must conduct validation tests on products prior to releasing the product into the market. Otherwise, we will see more truck tires flying off wheels on the road.

A good professional engineer must be a person with good character. He or she needs to constantly upgrade in his or her chosen field and understand the ever-changing political and economic environment. Before we try to enjoy the benefits of a P.Eng. designation, one must ask the question, “What did I do for the public?”

I hope that all my fellow professional engineers continue to enrich the meaning and privilege of our self-regulated profession before sharing the fruit of our hard labour.

I believe that a P.Eng. designation gives me some distinct advantages: recognition from society and other professionals...



Marie has been with CCPE for three years. Her responsibilities include supporting the work of the Canadian Engineering Qualifications Board and the CCPE International Committee.

Marie Carter, P.Eng.
Director, Professional and International Affairs, Canadian Council of Professional Engineers (CCPE), Ottawa

My views on the value of my status as a professional engineer and the importance of regulating our profession are based on more than 15 years of experience. The first 12 years of my career were spent with a well respected transportation engineering consulting firm in Ontario, and the past three years have been with the CCPE.

When I first started my career, following university, my goal was to obtain my engineering licence as soon as I could. I knew that this would give me professional status with our clients and help to establish that I had a career, rather than simply a job. It would allow me to easily demonstrate to clients and the public that I will work in the areas of my competence and take the issue of public safety as paramount.

I had a clear understanding of the responsibilities that come with being a professional engineer. I take responsibility for my work and for the work of the engineers-in-training, technicians and technologists who have formed the teams that I have worked with. I take responsibility for ensuring that my training and expertise are continually upgraded to maintain my competence. Our Code of Ethics helped me resolve questions of conflict where the client's wishes differed from the engineering results.

Our Code of Ethics helped me resolve questions of conflict where the client's wishes differed from the engineering results.



Annette graduated from Queen's University with a degree in material and metallurgical engineering and went on to pursue an MBA from York University. After eight years as a production engineer for a Hamilton-based steel manufacturer, her new career at Queen's University centres on advising and teaching undergraduate engineering students.

**Annette Bergeron, P.Eng., MBA
President and Chair, Ontario Society of Professional Engineers (OSPE)
Director, First Year Studies, Faculty of Applied Science, Queen's University, Kingston**

My status as a professional engineer helped me to move fairly quickly into a management position and a partnership in the consulting firm. It also qualified me for the position I currently hold with the CCPE.

For the past three years, my responsibilities have put me in the position of discussing many aspects of the regulation of the practice of engineering, particularly with emerging areas of technology. It is my view that once an area has been established to be engineering, those working in that area must be registered engineers. The Canadian public must have confidence that, for example, the individual who took responsibility for the software engineering that runs the elevator that takes us many metres up a shaft is indeed qualified to carry out that software engineering.

I have answered many questions from the Canadian public regarding the engineering profession and have come to realize the naivety that exists. It seems that most individuals trust that if a person calls him or herself an engineer, he or she is competent. It is our role as professionals to make sure that the public is well protected and that can only come from self-regulation. We are best positioned to judge ourselves and our peers on issues of professionalism and competence.

I knew in high school that I wanted to follow in my dad's footsteps and pursue a career in engineering. This path would allow me to combine my love of science with an opportunity to make important contributions to society.

I earned my degree in material and metallurgical engineering at Queen's University, followed by a master's of business administration at the Schulich School of Business at York University. But I knew the academic side was just the beginning. I wouldn't really be a professional engineer until I obtained my licence.

After a great deal of work and study, I earned my P.Eng. licence in 1990. This was an important stepping stone to my eight years as a production engineer for a Hamilton-based steel manufacturer. My new career centres on advising and teaching undergraduate engineering students.

When it comes to working and interacting with licensed professionals, society has a responsibility to be aware of what the licence means.

My licence is not only essential for our faculty accreditation, but allows me to serve as a role model to potential future P.Engs.

The value of the P.Eng. to me personally is that it immediately lets others know that I am a licensed professional. It makes my peers, colleagues and the public aware that I am qualified in terms of both my engineering experience and education. My licence shows the world that I have been tested and deemed worthy of carrying out my engineering responsibilities in society.

I believe the P.Eng. licence offers a great deal of value to the public as well. Seeing a "P.Eng." after a practitioner's name provides assurance that this individual has been scrutinized by his or her peers in terms of experience, education and ethical conduct. This scrutiny can, in turn, help to develop a sense of trust. Trust is important for any licensed professional, but particularly for a professional engineer who is responsible for public safety.

Of course, all licensed professionals are responsible for doing all they can to protect the interests of the public. Within a self-regulating profession such as engineering, the public and government authorities have added assurance—those who hold a licence are directly accountable to the public.

When it comes to working and interacting with licensed professionals, society has a responsibility to be aware of what the licence means. People who deal with licensed professionals need to know their rights and have appropriate expectations.

As far as the P.Eng. licence goes, the public should know that professional engineers have experience, a strict set of standards and that they are accountable for their actions. I know for myself, these are standards that will stay with me for a lifetime. 