Professional Engineers Ontario

WILLOWDALE-THORNHILL MARCH 2008

THE CHRONICLE

Message from the Chair

Recently I attended a seminar that made very clear to me the importance of engineering in meeting society's demands, and the role our profession should play in shaping the future.

Entitled *Earthwise*, the seminar was about the design of high-performance heating ventilation air conditioning (HVAC) systems that boast energy savings of up to 25 per cent. Near the end of the seminar, we were shown an interesting video discussing the changes in technology we can expect in the coming five to 10 years. And there were a dozen interesting points highlighted in the video. For instance, in 10 years half of the courses offered in the first year of engineering school will be obsolete by the time students reach their fourth year.

The video also showed the exponential rate that the Earth's population is increasing. As expected, that rate is especially noticeable in fast-growing Third World countries, such as China and India.

As the world's population is increasing, there will be an unprecedented need for energy, water, land, transportation, waste disposal, health care and infrastructure.

As engineers, do we feel we have to take action, or instead just watch the future take care of itself?

I know we are all busy with our daily lives, but our moral compass tells us to do something. It tells us to contribute to society. But how should we go about doing that? Maybe we should train engineers differently to better meet the challenges of the developing world and address the needs of the most destitute people. Today, an estimated 20 per cent of the world's population lacks clean water, 40 per cent lacks adequate sanitation and 20 per cent lacks adequate housing.

Do we have a discussion with our universities and propose changes in their programs? Do we change the requirements of the Academic Requirements Committee (ARC)?

Do we lobby government to help and encourage more engineering innovations and research?

Does this mean we have to be more involved with our association and our chapters?

These issues deserve an ongoing dialogue. I look forward to hearing from you.

Regards,
Noubar Takessian P.Eng.
Chair, Willowdale-Thornhill PEO Chapter

Notice of Annual General Meeting, Dinner and Dance

When: 6:30 p.m., Saturday, March 1, 2008 to 1:00 a.m., Sunday, March 2, 2008

Where: Novotel, 3 Park Home Avenue, Toronto, Ontario. Phone: (416) 733-2929.

What: Annual General Meeting (AGM) to elect Chapter executives. A dinner and dance is to follow.

If you plan to attend, please RSVP to secretary@wtpeo.org

Call for Executive Nominations, Annual General Meeting
Please email Frank Sorokin, P.Eng. at secretary@wtpeo.org if you want to nominate a member for a position on the executive of the chapter. All executive positions are voluntary with no direct monetary compensation, except for specific out-of-pocket expenses. The executive meets once a month and participates in events and functions of the Willowdale-Thornhill PEO Chapter.

Public Awareness Wanted!

Enhancing the public image of engineers

By Changiz Sadr, P.Eng.

I have written three articles to date about the lack of public awareness of the engineering profession in Canada, specifically in Ontario. Although I did not receive any notable responses to my previous articles, I still stand firm in my beliefs regarding the lack of public awareness.

Recently, I have met several engineers who have the same concern about improving the public image of engineering. Being a member of Professional Engineers Ontario's (PEO) Experience Requirements Committee, I attended a conference back in June about the future of engineering education and its impact on the profession. PEO President Walter Bilanski, who spoke at the conference, suggested a few changes to make to the current engineering education and to academic requirements for licensing as a professional engineer. He recommended changing the requirements to a master's degree in engineering and/or increasing the standard four years required for an undergraduate degree to five years.

Another activity discussed is the Voluntary Annual Reporting (VAR) tool on the PEO website, which is populated with the information we used to acquire our licence. We can update our profiles with additional education and/or work experience, thereby helping PEO with its efforts to get information about the status of practising engineers and their specific discipline of engineering. This information will ultimately help in adjusting the number of engineering graduates and immigrants in Ontario, which means a balance between the demands and supplies of engineers – a great social value for our profession. When the mentioned balance is in place, no engineers need to drive taxis or do any other non-engineering related work, as there will be enough engineering jobs for all engineers.

Currently, we are seeing some positive, promising activities here and there: the PEO licensure process through the Licensing Process Task Force, recent Government Liaison Program activities to get engineers involved in government and public policy, and discussion among chapters and PEO officials regarding revisions to the *Professional Engineers Act*. The Act has been revised and modified several times to address public safety issues and the changing responsibilities of the engineering profession. The last revision was in 1984.

August 29, 2007 marked the 100th anniversary of the Quebec Bridge collapse, which eventually led to the *Professional Engineers Act* and the inception of PEO in 1922. We can take advantage of this opportunity and generate publicity for engineering achievements and their impact on Canadian life. There is an article titled "100 Years of Canadian Engineering" in the September/October issue of *Engineering Dimensions* magazine (pp. 55 and 56), which could be a good start. If such articles were published in mainstream media outlets like *The Globe and Mail* or *Toronto Star*, more people would hear our voices and grasp a better understanding of engineering.

Changiz Sadr, P.Eng., CTP, is the Vice-Chair of the Willowdale-Thornhill Professional Engineers Ontario (PEO) chapter and is a member of the PEO's Experience Requirements Committee. He can be reached at csadr@yahoo.com.

Willowdale-Thornhill PEO chapter government liaison chair Nanda Lwin, P.Eng. (right), congratulates Willowdale MPP David Zimmer on his victory on election night October 10, 2007, at Smokey Joe's Cafe.

The Willowdale-Thornhill PEO chapter holds a licence certificate presentation for the latest recipients of the professional engineering (P.Eng.) licence at the Holiday Inn in Markham on October 24, 2007.

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Contributors: Changiz Sadr, Noubar Takessian.

www.willowdalethornhill.peo.on.ca

ENGINEERING NOTES by Nanda Lwin

Step By Step

Always watch where you step. I was always sensible when it came to taking measures to help the environment, at least, so I thought. I use public transit when I have to go long distances. I ride my bike to get around in the neighbourhood. I live in a small apartment. However, after taking a short Internet quiz (www.myfootprint.org), I discovered my ecological footprint is a bit too big for my liking: 7.9 hectares of the Earth's surface, just slightly below the Canadian average of 8.8 hectares per person. I scored particularly well in the Mobility category (meaning my preferred mode of transportation) – 0.4 hectares – but I garnered a rather high 3.4 rating in the Food category (translation: I eat too much meat). What this all means is that if everyone on the planet lived like me, we would need 4.4 Earths.

What is the ecological footprint? Developed in the 1990s by William Rees of the University of British Columbia, and Mathis Wackernagel, it measures the demand an individual, a community, or a country puts on nature. The footprint expresses this demand in terms of area of biologically productive land required to produce the food, fibres, wood, energy and all other items that are associated with human consumption, to give room for infrastructure, and to absorb all subsequent wastes and pollutants.

The footprint is to the environment what Myers-Briggs is to personality testing. Its popularity is due to the very fact that it's catchy and reduces something complicated – in this case human impact on the environment – to a format easy to understand. And yet it's telling and gives a rough indication of one's environmental impact.

The information derived from ecological footprint analysis is not only useful in its ability to give an assessment of the sustainability of a population but also in informing whether the population is running a "deficit" or a "surplus" relative to the Earth's available biological capacity. Specifically, by cross-referencing the footprint with the biocapacity, ecological footprint analysis indicates "whether and by what order of magnitude human consumption is currently exceeding the biosphere's regenerative capacity." It measures the extent to which human use of forestlands, croplands, pasture lands, fisheries, built environment and energy lands can be sustained.

In other words, by noting the footprint of a population in a defined area relative to the amount of productive space available, it can be determined whether consumption for the area is sustainable. When the ecological footprint is smaller than the available biocapacity, the consumption of the population is said to be sustainable. When the footprint exceeds biocapacity, that population is considered to be "engaging in unsustainable ecological overshoot or running a negative ecological balance."

Find out what your footprint is at www.myfootprint.org.

Nanda Lwin, P.Eng., is a professor of civil engineering technology at Seneca College. He is also a journalist and the author of several books.