BY BRONWEN PARSONS

SEVEN INSPIRING ENGINEERS

A PORTRAIT OF SEVEN INDIVIDUALS WHO STAND OUT FROM THE CROWD AND SHOW THAT ENGINEERING CAN BE A DIVERSE AND WONDERFUL WORLD OF OPPORTUNITY.

"We don't have big names to throw about; we don't have iconic engineers," commented an engineering professor at a recent panel discussion in Toronto.

While it is true that engineers and their work are often hidden from the public spotlight, it doesn't mean that many of them aren't dynamic individuals, born leaders who are driven by a vision to succeed. Their talents might be channeled into plying their craft as technical experts, or in heading up companies and projects.

This article profiles seven such exceptional engineers from across Canada, each shining brightly in their different ways.

When CCE asked for suggestions of inspiring engineers to be included in this article we received many excellent suggestions. We hope to include them in future articles in the same vein.

Powerhouse Executive

JOHN PEARSON, P.ENG.

John Pearson

What's striking about John Pearson is his dynamism and the dizzying rate of his activities. This is one high-energy person. "I just can't sit still, so I am always doing something," he says.

Pearson is global managing director for energy at Hatch, an

international engineering company based in Mississauga, Ontario. Pearson has worked for the company for 31 years, during which it has grown from 250 to 11,000 employees worldwide.

Over that time he has played many different roles, including being in charge of implementing all the company's advanced controls, expert systems, project-management and business systems.

Today he is a member of the Hatch Global board of directors, the Hatch Mott MacDonald board of directors, and until recently was chairman of the Hatch/Technip joint venture which is developing a $3.8-billion nickel mine in New Caledonia.

Multi-tasking is in his nature: "I'm one of those guys who drive you crazy because I'm always talking and e-mailing at the same time." When he's travelling he is constantly on-line and has a philosophy that he will deal with every question that comes up: "I just like the politeness of it."

Pearson has views on how to work with people. "My philosophy about business is that you have to let your leaders lead." He says he has four "strong" leaders in Hatch's Energy division: "I give them a broad framework with a clear envelope to work within, and then I tell them explicitly that I'm here to help solve their problems."

He continues: "It's just about getting the best out of people. The ability to be tolerant and understanding and compassionate is the universal remedy to all the other problems that come up. It doesn't mean you have to be a wimp, but you can set an environment that has people aspiring to higher goals. It really does work. "

His business travel has him circling the globe six times a year, but he finds time to sit on the board of directors of Trillium Hospital Foundation in Mississauga, advocates for the Sunnybrook Otolaryngology Unit in Toronto, and is a principal supporter of the Canadian Cycling Association. "I have learned lately that there is huge joy in giving. It's surprisingly fulfilling."

Another of his causes is his beloved cycling club, The Domestiques ("Cyclists Who Serve"). It has raised $8 million for charities this year. This restless individual cycles at least once a week: "Cycling gives me physical peace," he says.

Green Building Pioneer

STEPHEN CARPENTER, P.ENG.

Stephen Carpenter, P.Eng. has always been at the vanguard of the green building movement in Canada. He was one of a handful of people in the 1980s who were promoting sustainable building practices.

Today his company, Enermodal Engineering based in Kitchener, Ontario, can boast that it has been consultant on 30% of the hundreds of buildings that have been certified under LEED-Canada (Leadership in Energy and Environmental Design). Enermodal now has approximately 100 employees. Two years ago it became part of the MMM Group of Companies.

Stephen Carpenter

Carpenter was instrumental in establishing the LEED building rating system in Canada, and in 2011 he was made an inaugural Fellow of the Green Building Certification Institute, which is affiliated with the U.S. Green Building Council.

"In essence what I'm most proud of is that I helped to develop a whole industry and to take something that was at the fringes into something that is now fairly mainstream," Carpenter says.

"Clearly every building is not a green building, so our job is not done. But when I look at the type of clients we're working for now, versus who we were working for 10 years ago, I just wouldn't have believed it. Ten years go it was the Mountain Equipment Co-ops of the world, and now we're working with all the major developers."

What has enabled Carpenter to turn personal conviction into a successful business? "I think the important thing for any leader is that you have to inspire," he says. "You have to set the vision. You have to have clear goals. I think that is something that I have been able to articulate."

While he was ambitious for the company, "Growth for growth's sake was never the goal." If the green building market declines: "We're not going to sacrifice or change our values just because of the whims of the marketplace."

Carpenter is casting his gaze wider now to green communities and sustainable cities. "I've realized that we're not going to solve the world's problems through green build-

continued on page 32

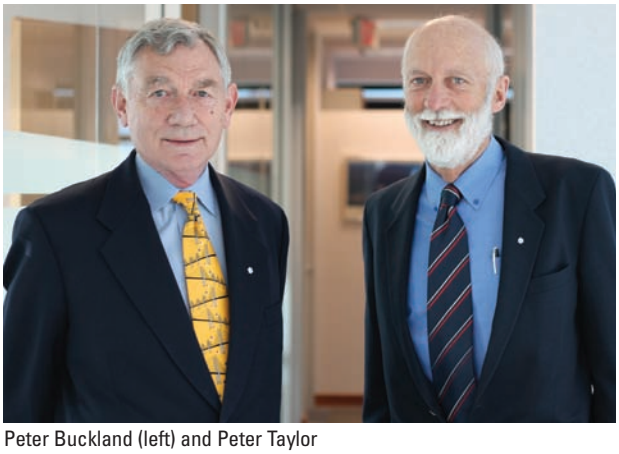
 continued from page 31

ings one by one. We have to take it up a notch and we have to be looking at how we design and build our cities. Our cities are anything but sustainable."

Carpenter talks of creating a new world. "There have to be some fundamental changes in how we do things. We're starting on that path, but we have a long way to go. It's a whole package of how we live and how we protect the natural environment. I don't think we're doing a very good job at all. We need a lot of changes, but people don't like change. That's the real test over the next few years."

Bridge Specialists & Innovators

PETER BUCKLAND, P.ENG., C.M. AND PETER TAYLOR, P.ENG., C.M.



Peter Buckland (left) and Peter Taylor

Canada doesn't have "star" engineers, but if it did, these two would be among them. Some of the most striking cable-stayed and long-span bridges around the world exist thanks to Peter Buckland's and Peter Taylor's expertise.

They set up a company 40 years ago in North Vancouver which has become internationally known for its innovative bridge designs. Buckland & Taylor Ltd. has played a critical role in award-winning projects from Abu Dhabi, to Australia, China, Thailand, the United Kingdom and the United States. The two principals are both Members of the Order of Canada (Peter Buckland in 2007 and Peter Taylor in 2009), in recognition of their role in raising awareness of Canadian bridge engineering expertise. For engineers, this is a rare honour.

Asked what they think is their greatest achievement as structural engineers, however, and both Peters cite projects close to home. "I think the rebuilding of the Lions Gate Bridge has to be the summit of my technical career," says Buckland. "Replacing the whole suspended structure while keeping traffic open in the daytime... it was a particularly difficult job and it was an original idea that no-one had done before."

Taylor's proudest achievement is having led the design team for the Alex Fraser Bridge, which at 930-metres (main span 465 metres) was the longest cable-stayed bridge in the world when it opened in 1986, and the longest in North America for 20 years. "That project put Buckland & Taylor on the map and was helpful in enabling us to develop a practice that spans the world in cable-stayed bridges," says Taylor. "So it was a very significant job, a very satisfying job, and a world-leading job for Canada."

They trace their success to a "daring" decision to focus exclusively on bridges. "From the earliest days Peter [Buckland] had a very strong vision that we were going to be a world-class bridge engineering company," says Taylor. "At the time we didn't have enough bridge work to sustain us." But, he continues, "It was a great strategic decision. It focused us. And Peter [Buckland] made many such wise decisions in the big picture, including diversifying out of Canada."

"We made the decisions together," Buckland gently reprimands him.

"We always enjoyed the challenge of innovation," says Taylor. "But there is some risk in going where nobody has gone before. You need the support of an understanding client."

"If you are going to go outside the code," Buckland adds, "you need to be very creative, and very capable, and also very careful. But it's so rewarding because we know that we have done things better than they were done before."

"We have had an interesting involvement with lots of bridges all over the world," says Taylor. "Hopefully that could inspire other Canadian engineers also to be world class in their field. You can be the best, but it's not an entitlement. You have to earn it in the form of a lot of hard work."

Young Professional

SELENA WILSON, P.ENG.

Selena Wilson has worked for McElhanney Consulting Services in Surrey, B.C. since graduating in civil engineering from the University of British Columbia in 2005. She specializes in large design-build infrastructure projects, including spending four years as highway design lead and civil coordinator on Surrey's Port Mann Bridge on-shore design project.

But when she's not doing

Selena Wilson

her day job Wilson is making her mark internationally in the consulting engineering field. She was an early participant and supporter of the Young Professionals Group that was established in 2006 at the Association of Consulting Engineering Companies-B.C.

In 2008, she joined the Young Professional Forum Steering Committee with FIDIC, the International Federation of Consulting Engineers, based in Geneva, Switzerland.

She has been to FIDIC conferences in Quebec, London, New Delhi, Davos, and Seoul as Canada's Young Professional representative. And this year Wilson is chair of the Young Professionals Forum Steering Committee for FIDIC.

"Our vision for the FIDIC Young Professionals Forum is to provide a platform that promotes and empowers young professionals around the world so that they can realize their own impact to make a difference in their local consulting community," says Wilson.

She says young professional groups help individuals to develop their personal skills, especially when they become involved on strategic planning committees. At that level, she says, someone is challenged to develop skills such as public speaking and organizing various task forces, i.e. the business skills that are not taught in university.

"These softer skills are really important for developing a well-rounded engineer who is not just technically driven," she says. "A lot of us engineers can be naturally introverted, so the YP groups really challenge us to get out there and start interacting and being able to effectively communicate. All that training helps develop yourself into a senior valuable engineer."

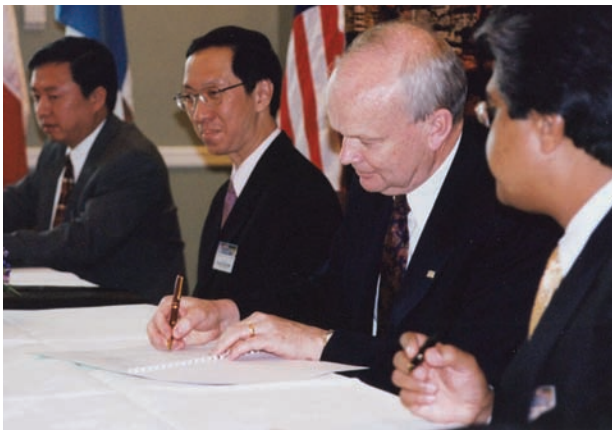
International Engineer

JOHN HERBERT, P.ENG.

What could be more inspiring than an engineer who has travelled the world and been instrumental in bringing clean water and sanitation to millions of people and in the process helped to clean up their environments? Such has been the career of John Herbert, P.Eng., vice president of CH2M HILL in Vancouver.

While Herbert has worked in several continents, his first and longest international assignment was the eight years he spent as a young man designing and managing the construction of wastewater treatment plants in Singapore. He went there with the British firm J.D. and D.M. Watson during the 1970s and 80s.

"At that time Singapore was a low-cost labour manufacturing place "totally different to what it is now," says Herbert. Big manufacturers like GE and Nestles had set up shop. "The Government of Singapore was just getting into industrial wastewater treatment and were trying to clean up the rivers and the shoreline," he recalls.



John Herbert (signing document).

Asked if he believes he made a difference, he thinks for a minute then replies: "Well if you go to Singapore now, you'll see that the river that was not much more than a sewer is now a source of drinking water. I didn't do it all myself obviously, but together we certainly cleaned Singapore up."

Another project he's especially proud of is in Barbados, where he did projects for 15 years as an engineer for Reid Crowther. Herbert managed to persuade the Inter-American Bank to fund a project to rearrange the plumbing in households in order to collect grey water directly, rather than letting it flow into the curbside street drains and via rivers and streams into the ocean where it was damaging the coral reefs and polluting the shoreline.

Herbert has also done lots of work in China, including working on the Xilang wastewater plant in Guangzhou, which was the first biological nutrient treatment plant in China.

"My key role was definitely getting the team together to do the job," he says, admitting that it can be challenging with the language and cultural differences. "I think you have got to be really patient and work very hard at listening and trying to see things from someone else's point of view."

Entrepreneur and Ambassador

JASON MEWIS, P.ENG.

At age 39 Jason Mewis, P.Eng. is president of his own consulting engineering company, ENGCOMP, in Saskatoon. To have started up your own company these days is a rare enough achievement, but this relatively young engineer is also chair-elect (2012-2013) of the Association of Consulting Engineering Companies-Canada (ACEC). In that position he will be the public face of an organization representing some of the largest engineering companies in Canada.

Mewis started ENGCOMP in 2004 when he was only 31,

continued on page 34

 continued from page 33

coming from a large international engineering company. An Alberta firm had approached him to start up a branch office in his home town. "I started my business plan for an office in Saskatoon and quickly realized that consulting engineering didn't require a lot of money to get started. So I decided I was going to do it on my own."

That turned out to be a fortuitous decision, because when Mewis called the Alberta firm back to tell them his decision, they had already sold out to one of the giant firms.

Today ENGCOMP has approximately 40 employees. Echoing Mewis's experience, the company specializes in the heavy industry sector in western Canada, doing multi-disciplinary engineering and project management. It is also developing a niche practice in project risk analysis and risk management, areas that Mewis finds fascinating because they are business-oriented.

Stuart Kasdorf

Jason Mewis

He puts a big emphasis on having the right team and trying to ensure that the employees find their work challenging and satisfying. "I did have a vision for a different kind of business and a different kind of experience for people to work in," he says. "Our view is that if we focus on our people first, they will be as motivated as they can be, and out of that will come a good product for our clients."

"When it comes to entrepreneurism, it's not a common thing to find in an engineer," he admits. "An entrepreneur will make decisions on the spot with whatever information they have at the time. And they will live with that and move forward, and if they're wrong, they will deal with it later and keep on moving forward. You have to be a people-person too. You can't just ignore the psychology of interacting with other individuals. I guess I was blessed with some skills and a personality that works in that way." **CCE**

products

STRUCTURES

Cascadia Green Wall Systems, a subsidiary of Denbow, has introduced a living wall that is not only a vertical garden but also an engineered retaining wall. www.cascadiagreenwalls.com

Dow Corning has a new Vacuum Insulation Panel with up to 10 times the thermal resistance of conventional insulation. It has a thin profile and contains 95% recycled content in the core. www.dowcorning.com

HVAC

Honeywell has opened a customer training and support centre in Fort McMurray, Alberta. It will serve industrial process and building control clients. www.honeywell.com

Uponor has a new PEX-a-Pipe Support as a steel channel to provide continuous support for cross-linked polyethylene tubing in suspended hydronic piping. www.uponor.ca

CAD

In October, **S-FRAME Software Inc.** announced that its entire structural engineering software will now be distributed in the U.S. by Texas-based Red Seat Software. The S-FRAME suite includes S-FRAME, S-STEEL, S-PAD, S-CALC, S-CONCRETE and S-LINE. www.s-frame.com