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ON BEHALF OF THE GOVERNMENT OF ALBERTA, IT IS MY pleasure to send greetings to the readers of Alberta Innovators.

Antoine Saint-Exupery once said: “A pile of rocks ceases to be a rock pile when somebody contemplates it with the idea of a cathedral in mind.” Albertans are used to being leaders, innovators and visionaries; when it is time for a change, we strive to use the tools before us to create something extraordinary.

Research and innovation that lead to economic diversification, enhanced environmental performance and social well-being are top priorities for our government. In order to flourish, the great ideas and technologies that Albertans create need the best support system we can deliver.

Thank you to the contributors of this magazine, as some of your ideas may be the key to Alberta’s biggest discoveries yet to come. Thank you also to the Consulting Engineers of Alberta, who provide this platform for Alberta’s most creative minds.

Rachel Notley
Spring 2017
Cautious Optimism

MESSAGE FROM CEA PRESIDENT

CONSULTING ENGINEERS OF ALBERTA (CEA) is integral to Alberta’s economy. With a membership of more than 85 firms employing nearly 9,300 staff, including engineering and technical professionals, CEA contributes over $2 billion to Alberta’s gross domestic product. CEA firms provide a wide range of engineering services to both government and private sector clients, and the talent of CEA member firms is in global demand.

The downturn in Alberta’s economy has taken its toll on many industries, including consulting engineering. Since oil prices started declining more than two years ago, the province has shed thousands of jobs in energy, manufacturing, construction and throughout the professional, scientific and technical occupations. With job losses, engineers have moved out of the province or switched careers altogether. Our industry experienced a similar brain-drain a few decades ago and that generation never returned. We are on the brink of history repeating itself.

With an uncertain economy, there is significant impetus to provide higher value to society for every dollar spent. As key contributors in the infrastructure industry, consulting firms are being asked to provide higher value for less money, but that is neither healthy nor sustainable. Our services are largely our expertise, experience and problem-solving abilities. We are challenged to maintain our existing level of service when our services are procured by price-based selection criteria, let alone to unleash the value potential. Under price-based models, consulting firms are often stymied from innovative thinking because they are forced to use less experienced people, and they are not afforded the budgets to be able to think outside the box. This is often a life cycle cost trade-off, with higher operation and maintenance costs borne by society in the future. A better model to promote innovation and added value is procuring professional services through Qualifications Based Selection (QBS).

Consistent with our national organization, ACEC, and our provincial member organizations, QBS remains our primary focus to avoid the predatory and undercutting pricing strategies that result in a “race to the bottom” with ultimately higher societal costs for our infrastructure. To this end, at the Annual Hill Day in Ottawa during the fall ACEC conference, many of our members were able to present our QBS message to federal ministers.

Our executive members met with past presidents in fall 2016 to confirm the direction of the CEA board, and we were in fact asked to “double down” our championing efforts on QBS.

Our strategy to “double down” has resulted in initial successes with Alberta Transportation, which has confirmed they will proceed with pilot projects using QBS procurement. Alberta Infrastructure has also indicated they will consider pilot projects using QBS, and Edmonton City Council is debating a motion to pilot projects using QBS as well.

We commend all levels of government for the recent announcements made on support and funding for infrastructure projects. We believe that countercyclical investment in economy-enhancing infrastructure is in the public’s best interest. Further, the federal government’s decision to support the Trans Mountain and Enbridge Line 3 pipeline projects – along with joint funding for projects such as the $1-billion Yellowhead Trail improvements, transit projects, schools and hospitals, water/wastewater and roadway, bridge and airport infrastructure projects – should go a long way to help stimulate our provincial economy. We believe that pairing these infrastructure investments with improved procurement models will further leverage dollars by engaging the most qualified practitioners and provide a higher value to society.

However, there remain unknowns surrounding the economy. Although oil prices appear to have stabilized somewhat, providing marginal increased confidence in the private sector, the federal and provincial initiatives on climate change and carbon taxes have created added uncertainty and caused some investors to pause and reassess viability of investments in the province. So, despite the hopefulness going forward, the mood tends to still be cautiously optimistic.

In true fashion though, CEA member firms have stepped up to the plate once again when it comes to innovation, with a record 56 project submissions for the annual gala in February. It is a true testament to the value we bring.

In closing, a healthy consulting engineering community contributes significantly to a strong economy and the well-being of society. Many of our member firms continue to experience challenging times in this current economy; however, there is much hope that we are in a strong position moving forward to positively contribute to the sustained growth and prosperity that Albertans have come to expect.

Lastly, I would like to express my thanks to Ken Pilip, Lisa Krewda and the entire CEA staff, who work tirelessly in the interest of our member firms and truly represent a professional organization.
Time to Get a Seat at the Table

Ken Pilip, P.Eng.
CEO & Registrar

It is hard to get a sense of the short-term and long-term economic prospects for Alberta and Canada. Member firms of the Consulting Engineers of Alberta, and those in other parts of Canada, are under an umbrella of caution going forward, looking for signs that we will return to economic stability and industry sustainability. The whole country appears to be gridlocked when it comes to oil prices, regulatory approvals and investor confidence. In the past, it was one predominant item that needed fixing; however, today there are a number of impediments appearing to be gridlocked when it comes to oil prices, regulatory approvals and investor confidence. In the past, it was one predominant item that needed fixing; however, today there are a number of impediments blocking a speedy recovery.

As I have said many times, our profession and industry does not fare well in a lengthy period of economic instability. This should be a concern for everyone, as the standard of living that we all take for granted, created for the most part by engineers, is on shaky ground. We have been through these downturns before, but the cause was easily defined and we knew from past experiences that a return to better days would occur within a short period of time.

The current economic outlook and cycle is different and, today, we do not yet see the light at the end of the tunnel. We are particularly concerned that the persistence of today’s economic uncertainty will cause our brightest youth to not choose science and engineering as a career, just when we need their expertise the most.

Over the past number of years, our industry has been advocating for serious infrastructure spending from all levels of government. We are pleased and grateful that both federal and provincial governments have responded positively. We believe it is prudent to borrow wisely and support infrastructure – which in itself is an economic enabler at a time when you are not competing with private-sector spending due to a cooled economy. Borrowing, however, is a double-edged sword; there are repayment obligations and, without a return to positive economic activities, this economic stimulus cannot go on indefinitely without serious consequences.

The economic stability of Alberta and Canada is also being challenged by climate change policy directives from provincial and federal governments. It was refreshing to read a letter from the Ontario Society of Professional Engineers to Ontario Premier Kathleen Wynne that read in part: “Matters of complex science, functionality and design are areas that demand the expertise of engineers to inform public policy decision-making. Sadly, the engineering community does not yet have an effective seat at the policy table. Often, by the time engineers are involved, high-level planning decisions have been made by non-technical persons. These individuals are often unaware of the engineering ramifications of their choices.” This greatly diminishes the ability to deliver more cost-effective options and deliver the best possible solutions to tackle complex problems.

So what, as an industry, can we offer? Our knowledge-based industry needs to be engaged as a “trusted advisor.” Like any client that retains our professional services, we are not there to criticize the client’s initiative. Our sole purpose is to objectively provide advice to effectively deliver the client’s initiative, putting forth the best solutions to ensure the public’s interests are respected and protected. With government clients, our professional obligations are the same: to serve the public’s interests and needs. When we ask graduates why they have chosen a career in engineering, almost all say: “To make a positive contribution to society.” Engineers are willing, able and amply qualified to provide advice on complex challenges. To be effective, the consultation needs to be engaged prior to the policy being rolled out, not after. Our industry needs to be part of a project at its beginning and play a role in finding the best possible outcomes that will serve the public’s best interests.

In Alberta, the Alberta Chamber of Resources does a wonderful job through its many members of providing input on numerous issues that face Alberta’s resource-based economy. The Task Force Report on Resource Development + the Economy and Caring for the Land are documents that speak to the sober thought that ACR members have provided as an informed opinion. This is another knowledge-based entity that has served Albertans with wise counsel, and we are very pleased to now be represented on the Board of ACR and to be able to participate and provide our input when and if required.

I would be remiss in not acknowledging the leadership of Lisa Krewda, CEA’s director of operations, and the staff of CEA for their dedication to continuous improvement. I am confident the staff and office efficiency is well-positioned to meet the future needs of CEA supporting its members. By their example, it’s a pleasure for me to be part of Team CEA. Please drop by when you are in downtown Edmonton and say hello. You too will then experience why I am so proud of the work that the CEA staff provide each and every day. For those of you that will require the services of a consulting engineer, please recognize engineering as an investment to be leveraged, rather than an expense to be minimized.

Say YES to Qualifications Based Selection.
Infrastructure is an investment in our future – not a quick fix

With a commitment of $186 billion over the next 11 years, the federal government has made it clear that it views infrastructure as an investment in long-term prosperity. Infrastructure can have a stimulating effect, but its real value is that it enables economic activity, connects people and communities, ensures public health and safety, and protects the environment. Consequently, it is a core business of government.

Study after study demonstrates a link between infrastructure investment and economic performance. Infrastructure investment grows the economy, strengthens communities and protects the environment. Furthermore, public infrastructure is a core business of government and vital to Canada’s prosperity. Infrastructure enhances the economic, social and environmental quality of life of all Canadians.

Therefore, the federal government’s infrastructure program has an opportunity to take advantage of historically affordable borrowing rates to make long-term investments in Canada’s competitiveness and productivity, enhancing infrastructure that, over time, will help us emerge from what is currently a persistently low-growth economy.

However, notwithstanding the current economic challenges, we must resist focusing on short-term “stimulus” spending aimed at so-called “shovel-ready” projects merely for the sake of speed and expediency. The real value proposition and the greatest return on investment require a long-term, strategic approach. Not only do infrastructure investments create skilled jobs and develop expertise across the design and construction sectors but, more importantly, they create long-term prosperity and jobs across all sectors, making the economy more resistant to future downturns. Further, these so-called “shovel-ready” projects are either small scale repair and maintenance jobs or projects that are already designed and have received all of the necessary approvals and permits. Unfortunately, as anyone who understands design and regulatory processes will agree, we cannot make projects “shovel-ready” retroactively. Additionally, in order to have “shovel-ready” projects next year and each year thereafter, planning and design needs to start now and continue year after year; a long-term, strategic approach is critical.

Consequently, the key will be picking the “right” investments. This is where careful design of the program will be vital. Success will require vision and the commitment by all levels of government to work with stakeholders to create and execute a program that provides the best value and return on investments to Canadians. Long-term, predictable infrastructure investment allows both government and the private sector to invest and develop the human and technical resources necessary to plan, finance, design, construct and operate infrastructure projects. Furthermore, prioritizing investments in critical economic infrastructure will make investments in community and green infrastructure financially viable and sustainable in the long term.

Modern and progressive procurement practices such as Qualifications Based Selection (QBS) for design professionals, rather than focusing on low price, will also contribute to the success of infrastructure investments by ensuring high-quality, high-value projects with increased service life and significant lifecycle savings.

The opportunity is tremendous and, if done correctly, can help Canada emerge from what is a stubbornly low-growth period. As a proportion of GDP, the proposed infrastructure investments are modest; however, they will yield massive benefits in the future as returns are compounded over decades. We cannot succumb to the temptation to choose ill-suited projects just because they are expedient or offer a “ribbon-cutting” opportunity. We urge the federal government and municipalities to be strategic and focus on projects that truly enhance productivity, are long-term in nature and will boost long-term economic growth. If we can accomplish this, the government – and, more importantly, all Canadians – will reap the rewards.
MESSAGE FROM THE MINISTER

ON BEHALF OF THE GOVERNMENT OF ALBERTA, I AM PLEASED to welcome readers to the Spring 2017 edition of *Alberta Innovators* magazine. I value this opportunity to thank all Consulting Engineers of Alberta (CEA) members for the important contributions you make in our province.

We know this past year was challenging for many Albertans, as low oil prices continued to impact our economy. We also know that building modern, efficient infrastructure during tougher times is vital to support the well-being of our families and communities, and to help set the course for economic recovery. That is why the Alberta government remains committed to investing significantly in infrastructure, with a focus on ensuring we come out of the economic downturn stronger than ever.

Alberta has a lot on the go and, despite economic challenges, opportunity abounds. It takes terrific partnerships – like those CEA members have with the Alberta government and with industry colleagues – to seize opportunity and make great things happen. So, thank you all for your enthusiasm, hard work and leadership. I wish you continued success as we partner together to build a more prosperous economy and a brighter future for every Albertan.

Brian Mason
Minister of Infrastructure
Spring 2017
Resilience Through Diversity

Bringing women and minorities into engineering will only make firms, teams and projects stronger.

**MESSAGE FROM THE YOUNG PROFESSIONALS**

Complex problems require teams with diverse expertise. As consultants, this is something that we understand well and build our teams around. To successfully deliver a large building construction project, we know we’ll need expertise in at least geotechnical, civil, environmental, structural, mechanical, electrical and architectural specialties. We also know that, for the best outcomes for our clients, we need to place teams where they contribute the most – we wouldn’t assign the geotechnical specialist to complete the electrical engineering portion of the project, and vice versa. This is a very clear example of appreciating and valuing diversity in technical experience, as well as recognizing that our success is directly tied to the makeup of our team.

What about when it comes to working with people, not numbers? Humans are arguably more complex than any technical challenge we’ll be faced with. Ultimately, all of our teams are made up of people; therefore, it follows that a diverse group of people in roles that utilize their fullest potential will form the most effective team possible, capable of delivering the best service to our clients. A diverse team is a resilient team that can weather the rapid economic changes we have seen and will continue to see in Alberta.

It is common knowledge that, when we look at the demographics of the engineering profession, we are not very diverse. When we look at our teams, the representation of women and minorities does not reflect the diverse population we serve. This under-representation limits the range of human experience and creativity our teams can draw upon when tackling everyday engineering challenges. A great example of incorporating and valuing diversity in human experience through design is the rise in physical accessibility, including elevators and ramps alongside or in place of stairs, which make cities more inclusive for people in wheelchairs or for parents with strollers. If we do not consider the human experience of different groups of people when making design decisions, we may not be making the best decisions for serving the public we represent.

Incorporating women and minorities into our teams is critical to the progression of making our design relevant to our population, and we need to foster work environments that are inclusive and welcoming to these groups to sustain this diversity. This will arguably make the human experience of our work richer, and will equip us with adaptable teams capable of serving the diverse population of Alberta.

CHRISTINA HOPKINS, P.Eng.
Director, YP
As the Alberta government shifts its focus to renewable energy, consulting engineers hope to have input into some big decisions.

Necessity has long been considered the mother of invention. But with Alberta’s Climate Leadership Plan designed to reduce the province’s carbon footprint, many engineers believe necessity will now have to be the mother of innovation.

The Climate Leadership Plan, which took effect on January 1, 2017 sets an ambitious target to end pollution from coal-generated electricity by 2030, cap oil sands emissions at 100 megatonnes per year, and reduce methane emissions 45 per cent by 2025. The province has imposed an economy-wide carbon tax on heating and transportation fuels such as diesel, gasoline, natural gas and propane. This new tax revenue will be reinvested into efforts to reduce greenhouse gas emissions, develop renewable energy technologies and help build greener infrastructure.

While the government has identified the goal, working out the details of how that will be achieved will involve the work of engineers.

Larry Staples is an Edmonton-based engineering consultant who also does engineering research. A civil engineer by training, he’s also an advisor to the Alberta Chamber of Resources, and would have liked to see more input sought from the engineering community as the Climate Leadership Plan was being developed.

“These kind of big-picture societal decisions – like we need to move off coal and onto renewable energy – in some ways, that is a values-based decision," Staples says. “It’s interesting to me that those values-based decisions are made with very limited input from the technological community and the engineering community. If we have a few more engineers participating in public life and participating in that sort of discussion and decision-making, we would end up with more robust decisions going forward.”

That is not to say that engineers would have nixed the plan, but Staples believes their input would have given it a greater chance of success. “There are so many technological ramifications to that decision-making process and I think there are many benefits, but there are also some risks about whether we can actually make a high proportion of renewable energy work in Alberta and whether we can actually get to where we need to be in 2030,” he says.

It will be a big challenge to make the necessary changes, and the fact that Alberta has several private companies – rather than one single electrical utility – could make it more challenging. The non-profit Alberta Electric System Operator co-ordinates the power grid in Alberta, but the provincial government intends to stick with free-market systems for electricity generation.

“If we’re going off coal, then we’re going to need some new ideas from the existing companies, many of whom already operate wind..."
farms and solar farms – not in Alberta, but in different jurisdictions,” Staples says. “Existing companies have to come forward and propose: ‘We’re going to provide this many megawatts’ – that’s the first place that engineers are going to be involved.”

**JANET RIOPEL, PRESIDENT AND CHIEF EXECUTIVE OFFICER**

Executive officer of the Edmonton Chamber of Commerce, thinks Alberta is well-positioned to make the transition from traditional energy to renewable energy, but emphasizes that the energy sector will be fundamentally important to Canada for decades, if not forever.

“We’re hoping that our existing resource sector and a gradual transition to a renewables sector is going to provide loads of job opportunities for Albertans,” she says. “There’s a huge pool of skill here that is available to be transitioned into renewable energy or re-engaged in the energy sector.”

Some labourers have already left, though, and Riopel thinks it’s important to identify opportunities in the province for as many of our skilled workers as possible. To that end, she would like to see efforts made to maintain existing investment and attract new investors in oil and gas to in order to get the economy moving again. That prospect received a huge boost last fall when the federal government approved two pipeline projects.

“Our premier stepped up to champion pipelines and we’re behind her all the way in that pursuit of access,” Riopel says of the pipelines that are expected to bring Alberta oil to tidewater and secure better prices in Asia for our resources.

“We must ensure that we strengthen Alberta’s reputation as a stable, competitive jurisdiction in order to attract the new investment that will spur our energy transition. This will be crucial to our future success.”

Staples expects engineers to be “integrally involved” in wind and solar power companies that seek to set up shop in Alberta. “All of those companies have to whip up competitive proposals,” he says. “Renewable generation is a very highly technical enterprise, so the creativity and innovation those engineers can bring into their company’s proposals can make them more competitive.”

Once approved, it will be time for the engineers on both sides of the table – regulators and producers – to roll up their sleeves and tackle the details.

“We have to start building these facilities, the solar farms and wind farms and gas-powered plants that have to back up those renewables,” Staples says. “They need to be well-planned and well-managed on this challenging schedule so those renewable sources and their backup plans come on at the same rate that we’re starting to retire the coal plants. There’s a lot of moving parts.”

Part of the plan is to use more natural gas to provide a flexible backup to renewables. Natural-gas power plants can be fired up or turned down more quickly than a coal plant, and the fuel is less carbon-intensive, but there’s also the risk of increasing the release of methane if that natural gas is fracked and comes from a well that is not properly capped. Methane has 25 times more impact on the environment than carbon dioxide and
has been recognized by the energy industry as something it needs to rein in. “The oil and gas industry has put in a lot of effort and has had a lot of success cutting back their methane emissions from their operations,” Staples says. “We can’t just switch from coal to gas and ignore the methane problem.”

John Kenney is a community energy advisor in the Kamloops office of Urban Systems Ltd., a professional services firm that specializes in civil engineering projects for communities in Western Canada. The company does land development work, larger transportation projects and energy transformation. Kenney’s background is in environmental and resource management, and he approaches projects from an economic perspective.

“I help communities manage energy use so they use energy more efficiently so they can reduce the amount of use or displace it through the use of renewables,” he says.

Reducing demand is a key aspect of any switch from carbon-intensive energy systems to renewables. “We use energy so inefficiently,” Kenney says. “We’ve got to design our communities more efficiently, so we can reduce the amount of energy needed to make our communities work and further transform where we get our energy from.”

He says we can be smarter about how we shape communities, but that can take decades – and we don’t have decades. That’s why public policy tools such as a carbon tax are needed.

He says we have a complete disconnect between our actions and our thoughts. While we might say we want to help fight climate change, we don’t always act like we do.

“Most people don’t explicitly think about their energy choices from short-, medium- and long-term perspectives,” Kenney says. “That’s why we see governments implementing policies like carbon taxes. If we really want to see tangible solutions advance in the next five to 10 years, we need public policy to accelerate meaningful change. It’s also about designing communities today so we use energy more wisely in the future; for example, increasing opportunities for active transportation and transit.”

As much as the little changes that we all can make will add up, the major gains will be made when governments act – it’s important for them to lead by example.

“We must ensure that we strengthen Alberta’s reputation as a stable, competitive jurisdiction in order to attract the new investment that will spur our energy transition.”

— Janet Riopel, President and CEO of the Edmonton Chamber of Commerce

“We need government to demonstrate leadership and make wise policy decisions, even when they can be unpopular,” Kenney says. “Also, whenever communities are deciding to invest in new infrastructure, such as a new rink or water treatment plant, it’s about using those decision points strategically to consider lifecycle energy use costs.”

Kenney is working with the Town of Canmore, Alberta, to prepare a community energy plan that will provide a better understanding of how much energy is used in municipal operations and throughout the community. That, combined with input from the community, will identify actions to pursue and determine its strategy to advance energy sustainability solutions.

“Not every community wants to see large wind turbines within municipal boundaries,” Kenney says, “but most can tolerate solar panels. So I expect to continue to see a lot of community-led solar projects. The economics of solar power are relatively favourable in Alberta, compared to a number of other jurisdictions.”

Meanwhile, Staples would like to see engineers tackle another big hurdle facing the renewables sector. “How can we imagine an energy storage device, a chemical battery, or a very inexpensive compression technology where we can store energy?” he asks. “That’s a grand challenge for Alberta, and whatever engineer starts to make some innovation in that regard is going to be very rich and make a great contribution to civilization.”

Making those contributions – in an economically feasible way – is what engineers do best.

“An engineer is a person who does with a buck what any darn fool can do with two,” Staples says. “That’s the space where we need to get to.”
Consulting engineers are working hard to become known as more than middle men

BY ROBIN BRUNET | PHOTOGRAPHY BY RYAN GIRARD

If there’s one person the broad community of engineers can relate to, it’s Rodney Dangerfield. The late comedian built his standup career on “getting no respect,” and while engineers may be a bit higher up on the totem pole, their skills rarely get the recognition they deserve.

Robert Prybysh, chief engineer at Edmonton-based Arrow Engineering, says, “On one hand, we’re portrayed as nerds with glasses and pocket protectors who merely crunch numbers and, on the other, some of us are furthering the misperception by portraying engineers as inexperienced millennials in kayaks taking water samples.”

“The truth is we’re middle-men negotiators, and what we negotiate are the improvements to infrastructure that keep our towns and cities operable.”

It may seem redundant to remind anyone in the development field about the important role engineers play in adding value to any private or public project, not to mention bringing efficiencies to even the most basic undertaking. But Kelly Yuzdepski, president of the Consulting Engineers of Alberta (CEA), and partner and vice-president, Western Canada, for CIMA+, points out that “the majority of owners procure engineers with a price component attached, suggesting that we’re perceived as having uniform skill sets and experience.”

Internationally, consulting engineers are often the first Canadian businesses into new markets.

— Kelly Yuzdepski, Consulting Engineers of Alberta (CEA) president, and partner and vice-president, Western Canada, for CIMA+

Prybysh points out that, in terms of dealing with the public, engineers are frequently perceived as the messengers of bad news, and, “as the old saying implies, messengers have a tendency of being shot.” He adds that it would be wonderful if people “accepted that the reason, say, pipes have leaked in their building is because of a nuance that could never have been predicted. But the urge to blame someone usually prevails.”

Prybysh good-naturedly accepts that some issues will never be resolved. “We’ll always be the middle men, trying to foster quality construction on one hand while struggling on the other to abide by some policies created by people who might not necessarily understand the technical requirements and fundamental objectives of our work.”

As for environmental initiatives that have heavily influenced the construction sector over the past 30 years, he says, “We’re at a point where so much of our building industry is expected to follow European standards. The trouble with this is not technology, but expectations. The technology is the same, but whereas clients in Europe expect a 15-year payback, for example, clients in Canada expect a payback in as little as three to five years. This creates conflict that we try our best to resolve.”

But while Prybysh takes a lot of the challenges facing engineers in stride, one practice Yuzdepski and most CEA members are hoping will become more common in the near future is Qualifications Based Selection (QBS).

With QBS, consultants are selected based on relevant work experience and strength of the project team, and never on price. In other words, the firm that best matches the project requirements is ranked the most qualified and therefore selected. Once selected, price is then negotiated. If this agreement isn’t possible between the parties, the next highest proponent is selected to negotiate price. “It’s an ongoing lobbying effort for our organization, and the fact that it has been a common practice in the United States and widely used in the City of Calgary gives us hope that it will eventually be legislated,” says Yuzdepski.

Currently, the CEA is working with Alberta Transportation to further the cause, and 20 pilot projects in 2017 will proceed under the QBS model. “We’re now determining the candidate projects, and the work for Alberta Transportation will include everything from roadway rehabilitation to bridge replacement,” says Yuzdepski. The CEA is also making headway with Alberta Infrastructure.

Of course, QBS is not the only issue the CEA is tackling – for example, promoting engineering in schools, especially to women, is another issue – but it’s something that could enhance the status of the industry. “It’s a national issue, but here in Alberta, we’re making headway,” says Yuzdepski. “So far, the long-term outlook is promising.”

By Robin Brunet | Photography by Ryan Girard
Dr. Fraser Forbes, Dean of the Faculty of Engineering at the University of Alberta, understands the desire of many Albertans to not ride the rollercoaster of oil prices. But he believes the province must concentrate funds in areas it feels will do well, rather than spreading money around to too many different industries, as he feels other provinces have done.

“The question we have to be careful about is, as we diversify, do we just want to have an average economy? Or do we want to be exceptional? I think Alberta has the capability of being exceptional,” Forbes says.

“If diversification means you want to be like Ontario and Quebec, I’m not so sure we want that, because it guarantees we’re going to be average. So let’s work with the resources we’ve been given and make Alberta exceptional.”

**FIRST AND FOREMOST, THE CONSULTING**

Engineers of Alberta is at leading edge of economic diversification thanks to a special team it has put together to look at the issue and advise the provincial government on how to proceed. That team is led by Rod Schebesch, vice-president of transportation at Stantec and a CEA director, and includes innovative thinkers from a wide variety of Alberta engineering companies.

“We kind of had a perfect storm, where oil prices were low worldwide, but at the same time, we had a new provincial government, which hasn’t happened in Alberta for 40-odd years. … Engineers by their very nature are problem solvers. Why don’t we try to leverage some of those problem-solving skills and idea creation skills that a lot of engineers have to help the new government and the province improve our financial situation?” he says.

Schebesch adds that the downturn has also resulted in a fair number of unemployed engineers in the province, and he hopes this sort of initiative will help create jobs and let them stay here.

Part of an engineer’s role in diversification, says Urban Systems principal and CEA past
president Matt Brassard, is advising clients on building the right kind of infrastructure that will foster economic development, and striking a balance between creativity and risk.

“You want to be putting money into the right kind of infrastructure, not just any and all infrastructure. There is such a thing as a bad investment in infrastructure,” Brassard says, “and so you've got to pick stuff – whether it's communication networks, making sure everyone is connected to high-speed internet, or it's transportation networks, making sure we have the ability to move goods in and out of the province through airports or logistics centres or highways, railways, pipelines and utility corridors – that's the kind of economic infrastructure that's required. When you don't have that stuff, you can't move an economy forward.”

ALBERTA HAS HAD SOME SUCCESS IN diversifying its economy. In 1985, oil, gas and mining made up 36.1 per cent of the province’s $67.6-billion gross domestic product ($24.4 billion total). By 2015, the total GDP had ballooned to $333.1 billion, but oil, gas and mining’s share of that had dropped to 18.3 per cent ($60.9 billion total).

Still, engineers like Brassard see a lot of potential in many other sectors, which could be realized through oil and gas revenues.

“Whether that’s alternative energies, whether that's leveraging a knowledge-based industry and developing another type of technology industry, whether that’s agri-foods or something different, that’s fine,” he says. “You can start to invest those dollars from a position of strength.”

Al-Terra Engineering Ltd. vice-president and director Sheldon Hudson sees potential in the transportation industry, inviting companies to come and test their new vehicles in a province that experiences a wide range of weather conditions. But he also warns that, if something isn't working, we can't be afraid to let it go.

“I think we need to be careful about artificially promoting diversity that maybe is not economically viable. If you've got an industry that's struggling, subsidizing that industry with taxpayer dollars for something that will never be viable without that subsidy is not diversification, in

“It’s the power of the ‘and’ and the tyranny of the ‘or.’ It’s not one or the other. I think, if you try to go to either end of the spectrum, you’ll end up in trouble.”

– Matt Brassard, principal, Urban Systems
my mind,” says Hudson, who also serves as ACEC liaison on the CEA board. “To me, you’ve got to be able to have your diverse economy stand on its own two feet and support itself.”

**HOVERALBERTA MAY NOT NEED TO**

look so far afield to diversify. Much of the oil and gas industry here is focusing on extracting oil from the ground and shipping it elsewhere for refining. But there are opportunities to add that value right in our own backyard.

“It’s the power of the ‘and’ and the tyranny of the ‘or.’ It’s not one or the other. I think, if you try to go to either end of the spectrum, you’ll end up in trouble,” Brassard says.

“Oil and gas has been the backbone of the economy in Alberta for a long time, and I would argue for our national economy, so you can’t just flip a switch and turn that off and expect to be successful.”

“Quite often, we talk about diversification as an apology for the oil industry that we have here. I don’t think that’s necessarily right or appropriate,” Hudson adds. “We need to recognize that we’re an energy economy, and I think it would be far better to build on those strengths.”

Meanwhile, Ian MacGregor can’t talk enough about economic diversification. He believes so strongly in it, he is building an $8-billion project near Redwater.

MacGregor is the chairman of North West Refining, which is a 50-50 partner with Canadian Natural Resources Limited in the ownership of the Sturgeon Refinery. A refinery may not sound like a big departure from oil and gas, but MacGregor sees it differently. When it is up and running in late 2017, the Sturgeon Refinery will convert bitumen extracted from Alberta oilfields into diesel fuel right here at home, rather than shipping it elsewhere.

“If we don’t start diversifying the economy, we’re going to be like lumberjacks who are really good at cutting down trees, but they can’t do anything else.”

— Ian MacGregor, chairman, North West Refining

Diversification isn’t easy; everybody talks about it, but it never happens,” he says. “It takes a long time, and you have to do it in a plausible way or you’ll never get there.”

**AND THE PEOPLE WHO WILL**

play a big part in getting us there are the current crop of engineering students at post-secondary institutions like the U of A. Forbes says he believes the current class is the most engaged and socially aware class since he was an engineering student in 1977. “They want to save the world,” he says.

Forbes adds that other faculties and schools within the university certainly have roles to play in preparing students to make a difference in the world, strengthen economies and improve everyone’s standard of living, but engineers are uniquely positioned to bring ideas to life.

“Engineers in particular are the group of people that bring technological advancement to practice, to the benefit of society. That’s what we do. … The role engineers play is to facilitate the realization of the diversification effort, whatever it is.”
Pipelines, transportation, clean water top engineers' lists of wise areas to invest in infrastructure

BY ROBIN BRUNET  | ILLUSTRATION BY ANDREW WEDMAN
Pipelines, transportation, clean water top engineers’ lists of wise areas to invest in infrastructure

BY ROBIN BRUNET | ILLUSTRATION BY ANDREW WEDMAN

Whether the economy is booming or busting, infrastructure investment is perpetual – and for good reason: Finance Canada estimates that every dollar spent increases economic growth by $1.50.

But investment isn’t what it used to be. According to the World Economic Forum Competitiveness Index, Canada has fallen in international overall infrastructure quality rankings, from 10th in 2008-2009 to 23rd in 2015-2016. “This is a dangerous trend that must be reversed as quickly as possible,” says Perrin Beatty, President and CEO of the Canadian Chamber of Commerce.

At a time when many experts say Canada’s future prosperity lies in the north, yet the oil and gas industry is in the doldrums, how can the money be best spent?
Beatty has long been a proponent of what some call “wise” infrastructure spending, and he has repeatedly stated that wise decision-making is relatively easy: “Thousands of Canadians idling in their cars because of traffic congestion, or bridge delays, can tell us what investments in infrastructure can mean in quality of life and productivity.”

“The success and competitiveness of Canadian business depends on modern and efficient infrastructure.” The challenge, he adds, is how to ensure current investment levels are not viewed as a one-off contribution to recession fighting.

During the 2015 federal election campaign, Justin Trudeau’s Liberal Party promised $60 billion in extra cash over 10 years for infrastructure, split evenly between public transit, green infrastructure, and social infrastructure (that figure has since been increased to $81 billion over 11 years).

Kelly Yuzdepski, President of the Consulting Engineers of Alberta (CEA), and partner and vice-president, Western Canada, for CIMA+, says, in his view, the most important infrastructure investment is in the transportation network.

“East-west pipelines are vital not only for Alberta, but for the entire country. We have to get our oil to tidewater to continue to be competitive in a global market.”

Calgary-based Mike Priaro agrees, and he also thinks specific pipeline development could actually reduce the environmental footprint of northern energy development. Last month, the veteran engineer and consultant gave a presentation to Parliament’s House Committee on Natural Resources, showing that an energy corridor from Fort McMurray through northern British Columbia to Prince Rupert could contain the proposed two million-barrel-per-day Eagle Spirit oil pipeline; TransCanada’s Prince Rupert Gas Transmission pipeline; and a potential liquefied petroleum gas/natural gas liquids pipeline.

Priaro says, “This would create a highly efficient energy corridor that would dramatically reduce the cost and the environmental footprint of energy development in Northwest Canada.”

“The success and competitiveness of Canadian business depends on modern and efficient infrastructure.”

– Perrin Beatty, President and CEO of the Canadian Chamber of Commerce
Canada and provide vastly improved access to markets in the Pacific Rim.”

Yuzdepski cites transportation infrastructure as the second-most important investment. During a recent trip to Dallas, he was impressed with the incredible quality of the American highway system and its ability to move masses of people with high-speed connections and frequent multi-level interchanges. “We have to think more about how important quality roads and highways facilitate the free flow of goods as well as people. While Edmonton’s Anthony Henday Drive ring road and the twinning of Highway 63 to Fort McMurray are projects we can be proud of, a lot more has to be done.”

In this regard, Yuzdepski has differing opinions about public transit and further railway development. While the former is important, he wonders how the transit network will be impacted with emerging technologies like driverless vehicles, autonomous vehicles and connected vehicles.

But the CEA president is bullish about rail spending. “Farmers and many other producers need to get their products to market a lot quicker and more efficiently, so we need to focus on improving freight rail infrastructure,” he says.

Helder Afonso, vice-president and general manager, Alberta North, for Associated Engineering, goes back to basics when citing one of his investment priorities. “Clean water is a must for every community in this country and, in many areas, we have a lot of catching up to do,” he says.

“We also need to put more resources into water recovery,” Afonso adds. “For example, perhaps with a further level of treatment, wastewater can be used for manufacturing rather than discharged back into rivers – this would also reduce industry’s use of potable water.”

While many infrastructure projects are rife with controversy, Afonso believes development can be done in a way that satisfies all parties. “I truly believe issues can be worked out through meaningful and respectful dialogue,” he says. “So, in this regard, open and skillful communication is another thing we can better develop.”

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Completing the CIRCLE
Former premier Ed Stelmach brings a unique perspective to the CEA board of directors

BY MARTIN DOVER | PHOTOGRAPHY BY BLUEFISH STUDIOS

FOR FORMER ALBERTA PREMIER ED

Stelmach, his relationship with the Consulting Engineers of Alberta has come full circle.

Stelmach first became acquainted with the CEA when he served as the reeve of Lamont County. “Municipal governments need a lot of engineering services to develop infrastructure and consulting engineers are the ones that provide the service,” says Stelmach. “I really got to know them well as provincial Minister of Infrastructure.” That relationship, based on mutual respect and trust, culminated in Stelmach being named to the CEA’s board of directors as an honorary director.

Stelmach and the CEA worked closely through some very difficult times. As premier, Stelmach led the province through a severe economic downturn and conducted a royalty review that only today is being recognized for its common sense and realistic contents. Leadership is more than a name badge; it is the willingness to take on difficult challenges and lead a team or a province through them. Stelmach’s sincere, down-to-earth approach certainly accomplished that.

“The CEA Board is a great group to work with. They are dedicated to working as team members in developing our province and they always discuss issues with the greater public interest in mind,” Stelmach says. “They are technological leaders, and always innovative. When we introduced the public-private partnership concept, especially for the ring roads in Edmonton and Calgary, they were there and we worked with them. They are seldom recognized, but are the reason we have some of the best infrastructure in the world.”

“Ed Stelmach makes an exceptional contribution to the Board of Directors of the CEA,” says CEA President Kelly Yuzdepski, P.Eng. “We always wanted someone who could give us objective advice from a government perspective. His experience as Premier, and in ministerial portfolios of Intergovernmental Affairs, Transportation, Infrastructure and Agriculture, and Food and Rural Development, plus his service as a municipal reeve, certainly provided him with the skill set we needed.”

Economic downturns and financial accountability are major challenges for government. “I have always supported the concept of infrastructure investment during times of a poor economy. The benefits are extraordinary – lower costs, easier access to labour, job creation, and an ability to keep our engineering capabilities intact. Fortunately, the current government is following our example and pursuing a similar strategy of investing in infrastructure,” says Stelmach.

“We accomplished more in five years, in terms of policy and actually governing, than some do in 10 to 15 years.” – Ed Stelmach

“People don’t fully understand the processes government uses; many decisions aren’t made overnight. If you’re asking for more money, it could be a year before a decision is made, until the next budget,” he adds. “But Consulting Engineers have always had a good rapport with the government, and now that we have a new government elected, it’s starting from the bottom up. Fortunately, I’ve had a good relationship with current Alberta Infrastructure and Alberta Transportation Minister Brian Mason over the years; that certainly helps.”

Throughout his career, Stelmach was always known for his two main principles: integrity and love of family. And he is guided by both.

His time in government is something he looks back on fondly, and he still follows politics closely, whether on a provincial, national or international level.

“We accomplished more in five years, in terms of policy and actually governing, than some do in 10 to 15 years,” Stelmach says. “And when you look at what’s going on in the United States and some of the issues locally, people may not have been supportive of the Progressive Conservative party, but they’ll tell you they could trust us. When that comes from a citizen, it means a lot.”

Since stepping down as premier in 2011, Stelmach has become involved with other organizations, most notably as the board chair for Covenant Health, which administers Catholic health care in Alberta. He is also heavily involved in the operation of the Ed Stelmach Community Foundation, which supports charities that “fall between the cracks” – that is, they don’t receive government funding or don’t have a big profile to attract ongoing donations.

“These small charities can identify needs in the community much quicker than government can, and deliver those services more efficiently,” Stelmach says. Some of the charities the foundation has helped out include Inn from the Cold, Little Warriors, the Grande Prairie Youth Emergency Shelter Society and the Families First Society in Fort Saskatchewan.

The foundation also gives out scholarships to deserving students in Stelmach’s former ridings who have overcome difficult circumstances in their lives and put the needs of others before their own.

Even with such a full schedule, Stelmach still finds time to tend to the family farm east of Edmonton, just as he did before becoming a politician. “I was fortunate enough to have a very supportive family, and I’m glad that I have the health that I can at least enjoy a few years with my grandchildren now,” he says.

He and his wife, Marie, still raise cattle every year. “It keeps me active – you get up in the morning and move around. You can only golf so much,” he says with a laugh. “I’m glad I’m back home on the farm.”

For more information on the CEA, visit www.ca.cea.org

PHOTOGRAPHY BY BLUEFISH STUDIOS

CAREER PROFILE

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PHIL WARNER WAS ONE OF THOSE KIDS who was told he should become a lawyer. “I was always known as being sort of the classroom lawyer and I gained a reputation for that,” he says. But, at times, his advocacy on behalf of fellow students was a little too strident for some teachers and it would earn him a visit to the principal’s office.

“I remember a principal in elementary school telling me in the course of one interview of a disciplinary nature that I should consider becoming a lawyer,” says Warner, who was born and raised in Edmonton. “I had a very high regard for that man.”

Warner eventually took that advice, earning a law degree from the University of Alberta. He joined the Edmonton office of the law firm Bishop & McKenzie right after graduation in 1969 and never left, serving as a partner in the firm for 43 years. One of the main reasons he joined that firm was the opportunity to work with senior partner James Redmond.

“Jim was one of the top trial and appeal lawyers in Canada. I saw working there as a golden opportunity to learn the ropes,” Warner says. For 10 years, he did just that, going to the Supreme Court of Canada five times “while carrying Jim Redmond’s bags.”

Redmond also did a lot of construction litigation and was counsel to a commissioner appointed to head up a public inquiry into the old Mechanics’ Lien Act. “As a result of the publicity associated with that, he got a regular diet of construction law work, and I got to do a lot of it alongside him,” Warner says.

Also, Bishop & McKenzie incorporated numerous engineering firms, a couple of which have gone on to build major national and international profiles. Warner says he was privileged over the years to provide advice to many of those engineering firms and has acted for insurers that provide liability insurance to engineering firms. “Suffice to say, I’ve had lots to do with engineers.”

That experience led to Warner being named to the Consulting Engineers of Alberta board of directors as an honorary director in 2016, along with former Alberta premier Ed Stelmach. “The two of us are expected to bring the broader public interest perspective to the mandate of the consulting engineers,” Warner says. “With my background, the intention is that I will at least raise the situations where some legal issues are involved in matters that are being considered by the board of directors as a whole or one of its committees.”

Warner has also provided legal opinions to the CEA board in the past but, in his current role, “the expectation is that, if I see something that needs to be reviewed from a legal perspective, then I’ll bring it to their attention and perhaps make a recommendation on who might be consulted to provide that input.” He says his work on the board has proven rewarding already. “Hardly a day goes by that I don’t have a conversation with someone who is trained as an engineer.”

Aside from his work with the CEA and in law, Warner is also a former professional pipe organist, and an avid skier and traveler. He is married to his wife of 47 years, Beverly – also born, raised and educated in Edmonton. They have two children: son Jeff, who is following in his mother’s footsteps, obtaining arts and law degrees from the U of A; and daughter Laura, who followed in her father’s footsteps, obtaining arts and law degrees from the U of A and now carrying on a litigation practice with one of Calgary’s top law firms.

Warner has noticed many similarities between the engineering and legal professions, including the challenge of keeping women in private practice; often, many seem to gravitate to in-house work or government positions.

“That’s not good,” he says. “I happen to be of the point of view that women bring a different and valuable perspective to issues in the firms. It’s important to keep them in private practice, and it’s just as important for the legal profession as it is for the engineering profession.”

Over the years, though, Warner has never forgotten how he was inspired to get into law. In fact, early in his career, he came face-to-face with his elementary school principal again – this time in a courtroom setting. The former principal was a Crown witness in a case involving two men charged with arson at a junior high school. Warner cross-examined him on the stand and, after the trial was over, they recalled the old days.

“Being the fine man that he was, he was expressing regret for the fact that he might have had some influence on my becoming a lawyer because of the difficult time I had given him on cross-examination,” Warner says.
CONSULTING ENGINEERS OF ALBERTA
SHOWCASE AWARDS
2017
DRIVING INNOVATION
A True Success Story

By the time Dimitri Papanicolas immigrated to Canada in 1980, he had already lived in three other countries. But Edmonton became the city he helped build, the city he gave back to, and the city he now calls home.

Papanicolas is the recipient of the 2017 Consulting Engineers of Alberta Lieutenant-Governor’s Award, recognizing his more than 30 years of service with Thurber Engineering Ltd. – the only firm he has ever worked for in Canada – and his contributions to the community, especially through his involvement with the Edmonton Strathcona Rotary Club.

“It’s something that never crossed my mind,” Papanicolas says of the award. “Thurber is a medium-sized company, and generally we don’t work as the prime consultant on a project; most of the time, we subcontract to another consultant. So to get recognition like this, it’s an honour for me and an honour for Thurber, which gave me the platform to work with them.”

“Dimitri has shown leadership in the growth of Thurber, but he is also someone who has really seen the rationale and reasoning to give back to his community,” adds Ken Pilip, chief executive officer and registrar of the CEA.

Papanicolas was born to Greek parents in the Democratic Republic of Congo, where he first decided to be an engineer because of his good grades in math and science classes, and became a mining engineer because of the country’s strong mining industry. Just as he graduated in 1974, his family was forced to leave due to political turmoil, and he went to the United Kingdom to pursue a master’s degree in rock and soil mechanics engineering from Imperial College of Science and Technology – University of London. Then, after a brief stint at an underground metal mine in his parents’ homeland of Greece, he made the move to Canada and, on the advice of a professor at the University of Alberta, got an interview at Thurber Consultants Ltd. (now Thurber Engineering Ltd.) with Dr. P.K. Chatterji, who offered him a job.

Decades later, Papanicolas says he never seriously entertained the idea of leaving Thurber. He started at the technologist level and eventually worked his way up to the position of chief operating officer and managing director of the firm, working alongside his colleague, business partner and friend Robin Tweedie.

“Thurber looked after its employees, and tried the best they could to improve their professional careers. They always genuinely cared about you as a person,” he says. “The working relationship with the people was great.”

Papanicolas was the main driver in growing of Thurber’s Edmonton office by adding geo-environmental engineering to their geotechnical practice, expanding in construction materials engineering (soil, concrete and asphalt), and opening a Fort McMurray office. Today, Thurber has grown to 300 employees in nine offices across Canada. Papanicolas says it’s a great thrill to see how much the firm has expanded and grown while still maintaining its specialized services. “It makes me feel good to be part of that,” he says. And while he reduced his hours of work in 2013, Papanicolas continues to help Thurber thrive through a part-time role as a specialist consultant, mentoring young engineers on different projects and passing on the knowledge he has gathered over his career. “I continue to learn from them also,” he adds. In 2013, Papanicolas was awarded the Stan Thomson Geotechnical Society Award; this award recognizes an individual’s contribution to the development and growth of the Geotechnical Society of Edmonton and to geotechnical/geo-environmental engineering in the Edmonton area.

Aside from his technical and mentoring work, though, Papanicolas also gives back to the Edmonton community through his Rotary work. He has been a member of the Edmonton Strathcona Rotary Club since 1993, but he says that it has only been in retirement that he has really been able to commit to it. He is the club’s president for 2016–2017.

“I have the time now, and I can help people in our community that are in need,” he says. “There are a lot of inner city schools that need assistance with the newcomers, particular learners, and increased poverty. There are a lot of families that appreciate our assistance. We help the homeless or the unfortunate ones who go through challenging times in their lives. As Rotarians, we offer our services and support whenever we can to local community centres such as YESS [Youth Empowerment and Support Services], the Mustard Seed, WIN House, and others. It doesn’t take long; it just takes being there and recognizing the call to help your fellow people.”

Reflecting on his journey, Papanicolas expresses great gratitude for living most of his life in Canada, a country that welcomes immigrants and gives equal opportunity to all.
Leaders of Tomorrow

After earning a bachelor of science degree in civil engineering in 2008 and a doctorate in structural engineering in 2013, both from the University of Alberta, it’s no surprise that Steven Oosterhof’s fingerprints are all over Edmonton. As an associate structural engineer at DIALOG, Steven has been involved with some of the city’s highest-profile and most iconic projects of recent years, including the Edmonton Arena District, the Kelly Ramsey Tower, the Edmonton Clinic Health Academy and an expansion of the Telus World of Science.

But beyond his work, Steven is deeply involved in the engineering community in Edmonton. He serves on the Consulting Engineers of Alberta’s Edmonton Buildings Committee and has maintained a strong relationship with his alma mater, the U of A, delivering guest lectures, judging student competitions and providing input to ongoing research programs.

Steven is also active outside the engineering profession, volunteering through the Alberta Science Network to visit elementary schools to share his excitement for science and engineering. He and his wife were part of a team that sponsored a family of refugees from Syria that arrived in Edmonton in December 2015. He has volunteered with the Mustard Seed and with the Mennonite Centre for Newcomers.

As a transportation project manager at WSP in Calgary and throughout his career, Mark Stout has been involved in a number of high-profile projects, developing strengths in sustainable transportation, active modes and project management. Some of his clients have included the City of Calgary, Alberta Transportation, Parks Canada and several private land developers. He has also worked on Transportation Master Plans for the City of Camrose and the County of Grande Prairie.

In addition to the bachelor of science degree in civil engineering he earned through Queen’s University in 2006 and the master’s degree in environmental studies, urban planning, that he earned from York University in 2008, Mark has also earned his Registered Professional Planner (RPP) and Member of the Canadian Institute of Planners (MCIP) designations. Mark has also volunteered with the Transportation Association of Canada, serving as the chair of its Sustainable Transportation Standing Committee. Outside of work, Mark is also active with his local community association, spending several years on its board as the volunteer Director of Planning. In this role, he reviewed development applications and met with community members both for and against said developments, and oversaw the delivery of their valuable comments to the City of Calgary.
Morrison Hershfield, along with sub-consultant CEMCO and specialists Mario Bastian and Dr. Edgar Paski, were retained by Guyana Water Inc. (GWI) to design water and sanitation infrastructure improvements for critical areas in Guyana.

Key components of this project included rehabilitation of three water treatment plants for Georgetown, construction of three new water treatment plants outside Georgetown, water distribution network rehabilitation, a feasibility review to convert the Tucville sanitary facility into a wastewater treatment plant, enhancing the GWI laboratory capabilities, local training, and reducing non-revenue water losses.

When completed, residents will receive clean, disinfected water of a quality that meets World Health Organization standards 24 hours a day.

Designs for Improvement of Water and Sanitation Infrastructure, Guyana

FIRM: Morrison Hershfield Limited
CLIENT/OWNER: Guyana Water Inc., through the Inter-American Development Bank
LOCATION: Georgetown, Guyana
SUB-CONSULTANTS: Caribbean Engineering and Management Consultants Inc.
OTHER KEY PLAYERS: Mario Bastian, Dr. Edgar Paski

Morrison Hershfield, along with sub-consultant CEMCO and specialists Mario Bastian and Dr. Edgar Paski, were retained by Guyana Water Inc. (GWI) to design water and sanitation infrastructure improvements for critical areas in Guyana.

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When completed, residents will receive clean, disinfected water of a quality that meets World Health Organization standards 24 hours a day.
Fort McMurray Wildfire Emergency Response and Water System Recovery

**FIRM:** Associated Engineering Alberta Ltd.
**CLIENT/OWNER:** Regional Municipality of Wood Buffalo
**LOCATION:** Fort McMurray, Alberta

On May 3, 2016, a wildfire caused the evacuation of all 88,000 Fort McMurray residents, and damage to over 2,000 structures. Associated Engineering quickly responded to assist the community of the Regional Municipality of Wood Buffalo. Associated’s team provided technical support to the Water Treatment Plant operators with remote monitoring and operation, ensuring the supply of firefighting water. Once it was safe to re-enter, Associated Engineering provided on-the-ground teams to fast-track development and execution of the Water System Recovery Plan for disinfecting and flushing the water system and provide safe drinking water in co-ordination with the re-entry of the community to return to their homes.

**JUDGES’ COMMENTS:**
“In the face of the wildfire and its aftermath, the actions and strategies employed by Associated Engineering were integral to the Region’s recovery of its water-related infrastructure and the services it provides. The employment of remote operations technology as a proactive tool proved ultimately to be a critical factor in protecting and assuring the maintenance of the infrastructure.”
Fort McMurray Wildfire: Wastewater and Stormwater Recovery

**FIRM**: Stantec Consulting Ltd.

**CLIENT/OWNER**: Regional Municipality of Wood Buffalo

**LOCATION**: Regional Municipality of Wood Buffalo

For a month, with very few people in town, Fort McMurray’s Wastewater Treatment Plant was inundated with water coming into the sewer system, devastating the plant’s biological process and requiring a transplant of biologically active seed material. Sewage lift stations sustained an array of damage. Debris from the burned areas impacted the wastewater treatment plant and the collection system. The drainage system was also impacted. Fire breaks left areas prone to erosion and outfalls were crushed. Ash and debris found their way into storm sewers. This infrastructure all had to be assessed and restored quickly for the repopulation of the community.

**JUDGES’ COMMENTS:**

“An outstanding undertaking to protect the community and the environment.”

*AWARD OF EXCELLENCE*

WATER RESOURCES & ENERGY PRODUCTION
Main Street Rehabilitation

FIRM: Associated Engineering Alberta Ltd.
CLIENT/OWNER: Town of Rocky Mountain House
LOCATION: Rocky Mountain House, Alberta
CONTRACTORS: Pidherney’s Trucking Ltd., Proform Concrete Services Inc., SG Landscaping Ltd., Modern Electric Ltd., Appollo Landscaping Ltd., Heavy Industries Theming Corp.
OTHER KEY PLAYERS: Fortis, Shaw, Telus

The Town of Rocky Mountain House had a vision to revitalize its Main Street to develop a welcoming, fully accessible street and help transform its downtown into a vibrant business hub and tourist attraction. Main Street’s steep grade and cross slopes made designing an accessible, pedestrian-friendly streetscape a challenge. The project team was commissioned with a task of establishing grades for terraced and roadside boulevard walkways linked by ramps and stairways, making each business fully accessible. By integrating new pathways with eye-catching planters, public seating and ornamental lighting, the designers have created spaces enhancing the downtown experience for residents and tourists.
Mayerthorpe Rail Bridge Replacement

**FIRM:** Klohn Crippen Berger Ltd.
**CLIENT/OWNER:** CN Rail
**LOCATION:** Mayerthorpe, Alberta
**CONTRACTORS:** ConeTec, Mobile Augers, Challenger Geomatics

Klohn Crippen Berger, Challenger Geomatics, Mobile Augers and ConeTec were retained by CN Rail to complete a site investigation, design and construction supervision of a bridge near Mayerthorpe that was destroyed by fire on April 26, 2016. Services to Grande Prairie and beyond were disrupted by the fire, and the goal was to have the line back in service within three weeks. This goal was achieved with rail service being restored on May 12, 2016. Klohn Crippen Berger worked in close collaboration with CN Rail and other contractors to complete the investigation, design and construction monitoring overlapping to facilitate the fast tracked construction.

**JUDGES’ COMMENTS:**
“Very professional and timely approach to an important project for Alberta’s continued economic interests. The aggressive schedule (three weeks) minimized interruption to impacted businesses. The use of a drone to collect georefered photos/digital elevation models is unique.”
In 2009, Edmonton City Council approved an Area Structure Plan for an Energy and Technology Park based on an eco-industrial hub concept that may include a polypropylene plant; an integrated ethylene, polyethylene and glycol plant; a fertilizer plant; and/or a methanol plant. Golder Associates Ltd. was retained by the City to assist in a multi-criteria spatial analysis using a unique sustainability analysis approach that evaluated and balanced 43 key project concerns and trade-offs including environmental, social and technical factors. This allowed the City to explore numerous options, save months of effort, reduce risk, and have greater confidence in its strategy.
Northeast Anthony Henday Drive DBFO

**FIRM:** AECOM Canada Ltd.  
**CLIENT/OWNER:** Flatiron-Dragados-Aecon-Lafarge JV and Alberta Transportation  
**LOCATION:** Edmonton, Alberta  
**SUB CONSULTANTS:** Stantec Consulting Ltd.; MMM Group Limited, a WSP Company; Tetra Tech; COWI North America Ltd.; Amec Foster Wheeler Environment and Infrastructure; Spencer Environmental Management Services Ltd.; Great Northern Engineering Consultants Inc.  
**CONTRACTORS:** Flatiron, Dragados, Aecon, Lafarge  
**OTHER KEY PLAYERS:** Capital City Link Group

Opening in October 2016, Northeast Anthony Henday Drive is the final leg of Edmonton’s ring road, consisting of 18 kilometres of reconstructed freeway, nine kilometres of new green field freeway and 46 bridge structures, including twin bridges over the North Saskatchewan River. AECOM was the lead designer, supported by Stantec, MMM Group Ltd., Tetra Tech, COWI, Amec Foster Wheeler, Spencer Environmental and GNEC. The $1.8-billion P3 project, owned by Alberta Transportation, was led by Capital City Link and built by FDAL. The freeway is improving commutes around Edmonton, and the movement of goods and services around the province.

**JUDGES’ COMMENTS:**  
“Complex P3 projects require a high degree of collaboration, and this project met timelines and budgets despite significant existing site condition challenges. Great teamwork led the way to a successful project.”
To support the complicated and delicate control system migration process, CIMA+ developed the TEMPUS tool to facilitate the replacement of any industrial control system to a new platform without shutting down plant production. TEMPUS was piloted to complete the online migration for a Suncor 500HP ODB centrifuge to a new control system. Before TEMPUS, full online commissioning had never before been possible. The ability to maintain any process within its operating envelope will not only minimize risk to facility workers and those in the surrounding area, but it will also improve cost effectiveness and reduce loss of production.

**JUDGES’ COMMENTS:**
“The technology innovation that enabled the migration to occur without a full production stop is the highlight.”
EPCOR delivers water and wastewater services to more than one million people in over 85 communities and industrial sites in Canada. Wastewater treatment is critical work, yet can be potentially hazardous, as daily exposure to biological materials can increase the risk of exposure to pathogens. To reduce this risk to wastewater workers, SMA and EPCOR integrated their risk, engineering and microbiological expertise to develop a first-of-its-kind multi-pathogen Quantitative Microbial Risk Analysis model. The model evaluates 648 scenarios with over 455 million calculations to highlight high-risk roles. The result is high-impact safety improvements that reduce risk of illness from pathogen exposure.

JUDGES’ COMMENTS:
“Great initiative, the results of which will protect the long-term health of visitors and workers at wastewater treatment plants.”
Rogers Place

FIRM: Joint Submission: Stantec Consulting Ltd.; MCW Hemisphere Ltd.; DIALOG; Amec Foster Wheeler Environment and Infrastructure

CLIENT/OWNER: Edmonton Arena Corporation and The City of Edmonton

LOCATION: Edmonton, Alberta

SUB-CONSULTANTS: Stantec Consulting Ltd., MCW Hemisphere Ltd., DIALOG, Amec Foster Wheeler Environment and Infrastructure

CONTRACTORS: PCL Construction Management Ltd.; Canem Systems Ltd.; Arpi’s North Inc.; Structural, Heavy Steel Construction, a Division of Canam Group Inc.

Rogers Place is the most modern arena in the National Hockey League, with over 1.1 million square feet of space. This was an extensively collaborative project, involving the Edmonton Arena Corporation, the City of Edmonton, HOK, ATB, Thornton Tomasetti, ME Engineers, DIALOG, MCW Hemisphere Ltd., Stantec Consulting Ltd., AMEC Foster Wheeler and PCL Construction Management Inc. working together daily – sometimes hourly – to design and construct on an extremely tight schedule, allowing Rogers Place to open on time and on budget.

JUDGES’ COMMENTS:
“Engineering teams displayed exemplary technical and managerial excellence in designing and constructing this spectacular arena on time and within budget. Incorporation of challenging unique features that enhance patron experience contributes to making this a world-class sports and entertainment facility that will benefit the community far into the future.”
Unique in purpose and form, Studio Bell is a non-typical building requiring very atypical solutions! As structural engineer, RJC had to consider how to incorporate a condemned historic building, design a buildable structure when everything is curved and/or inclined, design a bridge 65 feet above an active roadway, achieve the architect’s vision of the vessels “floating” with minimal support, frame a column-free theatre with sloping walls and design a five-storey cantilevered feature stair. Through creative thinking, technical excellence and close collaboration, the completed project is an iconic piece of architecture in Canada and the world.

JUDGES’ COMMENTS:
“Impressive. Innovative design, along with engineering solutions to meet design needs, results in an eye-popping iconic centre for the performing arts that will be marveled by the public.”
Studio Bell, Home of the National Music Centre

FIRM: Stantec Consulting Ltd.
CLIENT/OWNER: National Music Centre
LOCATION: Calgary, Alberta
CONTRACTORS: Cana Construction, Arpi’s Industries, Custom Electric
OTHER KEY PLAYERS: DukeEvans; MMM Group Limited, a WSP Company; Jensen Hughes

An iconic structure inspired by the bodies of musical instruments, Studio Bell’s curves and collections called out for a mechanical system of equal technical and aesthetic finesse. Home to the National Music Centre and Canada’s Music Hall of Fame, Studio Bell is a testament to what can be achieved through collaboration between clients, architects, engineers and builders: Allied Works Architecture; Kasian Architecture, Interior Design and Planning; Stantec; SMP Engineering; Read Jones Christoffersen; Cana Construction; Arpi’s Industries; Custom Electric; DukeEvans; WSP - MMM Group; and Jensen Hughes. Stantec is proud to have played a key role in Studio Bell’s developing story.

JUDGES’ COMMENTS:
“Sustainable design, complexity, and resiliency – this project has it all. It’s a unique site incorporating a historic building, an elevated skywalk, performance and exhibit space as well as retail and a cafe. The LEED designation was achieved with great technical innovation, as well as ensuring a resilient building, given its proximity to the flood zone in downtown Calgary. Studio Bell will be a cultural centerpiece for Calgary’s East Village for years to come.”
Addressing City of Calgary Odour Concerns with Real-Time Surveillance System

FIRM: Golder Associates Ltd.
CLIENT/OWNER: City of Calgary
LOCATION: Calgary, Alberta
SUB-CONSULTANTS: Airdar Inc.

Golder Associates Ltd. was retained by the City of Calgary in the spring of 2014 to help resolve an ongoing issue of identifying the source of foul odours present in residential communities surrounding the City’s Fish Creek Wastewater Treatment Plant. Golder developed and undertook a unique and ongoing air quality monitoring study in partnership with Airdar, an Alberta-based company whose technology has been able to effectively locate, measure and continuously monitor local odours in real-time, and to support a safe livable environment for surrounding communities.

Aquatera Bioreactor Landfill Gas-to-Energy

FIRM: Stantec Consulting Ltd.
CLIENT/OWNER: Aquatera Utilities Inc.
LOCATION: Grande Prairie, Alberta
CONTRACTORS: Graham Construction and Engineering LP, BTO Contracting Ltd.

The Aquatera Landfill Gas-to-Energy project converts a commonly unused and naturally occurring resource into useful energy with significant environmental and economic benefit. This innovative and challenging project captures methane gas from decomposing waste at Aquatera’s landfill and converts the gas to heat and power, significantly reducing greenhouse gas emissions, reducing third-party utility costs, and improving air quality. Stantec is proud to have provided engineering services for all aspects of the project and to have been part of Aquatera’s commitment to continued environmental stewardship.
The ATCO Regional Industrial Water System embodies a new era of water asset management in Alberta’s Industrial Heartland, the largest hydrocarbon processing region in Canada. Through a single intake on the North Saskatchewan River, the system distributes water to multiple end-users via a series of pump stations, pipelines, treatment facilities and storage reservoirs. It provides a new mechanism through which development can continue to expand regionally, while minimizing adverse impacts on the surrounding environment. Stantec is proud to have provided overall project management, planning, design, regulatory support and construction administration for ATCO’s system over the past seven years.

Tetra Tech worked with Newalta to design a safe and cost-effective closure approach for a former oilfield waste land treatment facility located south of Drayton Valley, Alberta. Preliminary estimates to remediate the site to the generic Tier 1 criteria using traditional “dig and dump” methods exceeded $100 million. Traditional remediation was deemed to be unrealistic, a poor use of topsoil resources and did not present an overall benefit to society. Alternatively, a risk-based approach was adopted to evaluate potential human and ecological health risks, and ultimately identified that a boreal forest conservation area was the most valuable end land use.

FIRM: Urban Systems Ltd.
CLIENT/OWNER: Town of Elk Point
LOCATION: Edmonton, Alberta
OTHER KEY PLAYERS: Village of Boyle, Consulting Engineers of Alberta, Alberta Municipal Affairs

The Town of Elk Point and the Village of Boyle, in partnership with the Consulting Engineers of Alberta and Alberta Municipal Affairs, chose Urban Systems through a Qualifications Based Selection to develop an Asset Management Handbook and Toolkit for Alberta’s small to mid-sized municipalities. The process included a comprehensive desktop review of all Asset Management resources and extensive consultation with municipalities to better understand their challenges. The outcome forms part of Alberta’s approach to Asset Management. Urban Systems prepared digital databases and Asset Replacement Forecasts for partner municipalities to give them an overview of their infrastructure and approximate timing of major replacements.

JUDGES’ COMMENTS:
“Excellent value added to these municipalities but also entire municipal network.”

Construction and Modernization of Alberta’s School Infrastructure

FIRM: Al-Terra Engineering Ltd.
CLIENT/OWNER: Alberta Infrastructure and Local School Boards
LOCATION: Various locations across Alberta

Al-Terra Engineering has worked on project teams with architectural firms and other sub-consultants for Alberta Infrastructure and school boards on over 45 school projects across Alberta in the past eight years. Al-Terra’s role has included input to the site plan layout and the design of site grading, underground services, stormwater management and parking /drop-off areas. Often, the scope of work extended off-site to the adjacent streets, including site access, layby lanes and the extension of underground services. Al-Terra has been involved from the concept phase through design, construction and the warranty period, either in a prime civil consultant role or a bridging consultant role.
Edson Healthcare Centre

FIRM: DIALOG
CLIENT/OWNER: Alberta Health Services and Alberta Infrastructure
LOCATION: Edson, Alberta
SUB-CONSULTANT: ISL Engineering and Land Services Ltd.
CONTRACTORS: Stuart Olson, Strathcona Mechanical Ltd., MCL Power Inc., CDN Power Pac

The Edson Healthcare Centre is a 15,417-square-metre acute care facility that treats health and wellness as importantly as energy efficiency. The wellness component includes patient access to the exterior and a beautiful landscaped courtyard, as well as areas of respite in the acute care areas. The site is only allowed 50 per cent building coverage and the hospital is structurally constructed as post-disaster. Energy efficiency measures include a very high performance envelope, condensing boilers, radiant heating and cooling, displacement ventilation and extensive daylighting. DIALOG provided the ASME services and ISL provided civil and landscape services for the facility.

JUDGES’ COMMENTS:
“I was impressed by the scope, degree of integration and additional safeguards taken to manage the inherent risks of a healthcare facility – combined with a healthy and sustainable design. This is a shining example of how engineering and design can have a significant and immediate benefit to the people that we serve. Kudos to the design and construction team!”

Highway 13 and Highway 21 Roundabout

FIRM: Al-Terra Engineering Ltd.
CLIENT/OWNER: Alberta Transportation
LOCATION: Camrose, Alberta
CONTRACTORS: Border Paving Ltd., Norelco Contractors Ltd., Camrose Sod and Landscaping, Lafrentz Road Marking

Alberta Transportation engaged Al-Terra Engineering to provide consulting services to design and implement a modern roundabout at the intersection of Highway 13 and Highway 21 east of Camrose, Alberta. The combination of agricultural and industrial uses on the corridor mixed with commuter traffic provided a unique set of challenges for designers to accommodate high volumes of passenger vehicles as well as large oversized vehicles. Al-Terra’s design and tender package included a detour that allowed traffic to by-pass the intersection while maintaining all-direction traffic flow during construction. The detour played a significant role in completing construction in less than six months.

JUDGES’ COMMENTS:
“Safety challenged intersection and accommodates oversize loads. Overall cost savings.”
The saying “take something old and make it new again” is extremely fitting for the Medical Isotopes and Cyclotron Production Facility located near the University of Alberta South Campus. This was a joint initiative between the University of Alberta and Alberta Health Services, with design and construction services from MCW Hemisphere, HFKS Architects, Stuart Olson, Priority Mechanical and Territorial Electric. This revolutionary facility utilizes the former Balmoral Curling Rink as the foundation for a “box within a box” design housing a new cyclotron and hot lab production facility to produce critical radioisotope drugs for treatment of local patients.

**JUDGES’ COMMENTS:**

“This project touches on all the key judging criteria. Combining old with new, adapting and innovating, with the sole purpose of maintaining a critical supply of life-saving products is the foundation of our profession.”

---

The Jeanne and Peter Lougheed Performing Arts Centre is a 580-seat theatre located on the Augustana Campus. The theatre includes many sustainable features, such as building-integrated solar panels on all four sides of the stage tower, a high-efficiency chiller and condensing boiler, energy recovery in the air-handling units, displacement ventilation and water-efficient plumbing fixtures. It is also the first theatre in North America to use LED stage lighting. This resulted in a reduction in load from 100 kilowatts to 12.5 kilowatts. All these measures combined to achieve four Green Globes, which is the highest possible rating.

**JUDGES’ COMMENTS:**

“This project touches on all the key judging criteria. Combining old with new, adapting and innovating, with the sole purpose of maintaining a critical supply of life-saving products is the foundation of our profession.”

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**Medical Isotope and Cyclotron Facility**

**FIRM:** MCW Hemisphere Ltd.

**CLIENT/OWNER:** University of Alberta and Alberta Health Services

**LOCATION:** Edmonton, Alberta

**SUB-CONSULTANT:** HFKS Architects, Stuart Olson

**CONSULTANTS:** Territorial Electric, Priority Mechanical

The saying “take something old and make it new again” is extremely fitting for the Medical Isotopes and Cyclotron Production Facility located near the University of Alberta South Campus. This was a joint initiative between the University of Alberta and Alberta Health Services, with design and construction services from MCW Hemisphere, HFKS Architects, Stuart Olson, Priority Mechanical and Territorial Electric. This revolutionary facility utilizes the former Balmoral Curling Rink as the foundation for a “box within a box” design housing a new cyclotron and hot lab production facility to produce critical radioisotope drugs for treatment of local patients.

**JUDGES’ COMMENTS:**

“This project touches on all the key judging criteria. Combining old with new, adapting and innovating, with the sole purpose of maintaining a critical supply of life-saving products is the foundation of our profession.”
Safety in MINEd – Genesse Mine Roads

FIRM: Opus Stewart Weir Ltd.
CLIENT/OWNER: Prairie Mines and Royalty ULC
LOCATION: Warburg, Alberta
SUB-CONSULTANT: Prairie North Construction Ltd.
OTHER KEY PLAYERS: Capital Power Corporation, Leduc County

This challenging project at Genesee Mine, southwest of Edmonton, brought several parties together to investigate, assess and manage the risks associated with constructing a new greenfield connector within the bounds of an operating coal mine. The new road traverses several minor waterways, navigates around storm and sediment ponds and avoids an existing spillway. A one-kilometre portion of the road is adjacent to, and then crosses, an active haul road before finally connecting into Highway 770. Through early engagement and collaborative value engineering sessions, safety aspects of the design were robustly challenged to achieve the objectives of all parties.

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Seebe Bridge Pipeline Crossing

FIRM: Stantec Consulting Ltd.
CLIENT/OWNER: ATCO Pipelines
LOCATION: Seebe, Alberta
SUB-CONSULTANT: Thurber Engineering Ltd.
CONTRACTORS: Graham Infrastructure, Norfab Manufacturing

Stantec’s expertise and collaboration of pipeline and bridge design allowed the creation of a unique solution to decommission an existing vehicle bridge and provide a new bridge design. Stantec’s work with Thurber Engineering, Graham Infrastructure and Norfab Manufacturing created a safe and reliable bridge for ATCO’s pipeline and factored in growth potential with the pipeline size. Immediate concerns for the existing crossing were addressed through detailed inspections. A new bridge design was developed, offering ease of operations and maintenance, a 75-year service life and a structural system that reduced material requirements and ease of fabrication and erection.

JUDGES’ COMMENTS:
“Challenging environment for demolition and erection of the new structure.”
The Mosaic Centre for Conscious Community and Commerce

FIRM: FAST + EPP
CLIENT/OWNER: Cuku’s Nest Enterprises
LOCATION: Edmonton, Alberta
SUB-CONSULTANTS: Manasc Isaac Consulting, Clark Engineering, Renu Building Science, Shelby Engineering
CONTRACTORS: Chandos Construction
OTHER KEY PLAYERS: Manasc Isaac Architects

The Mosaic Centre for Conscious Community and Commerce is a 30,000-square-foot office building that houses a child care facility, wellness centre/fitness studio, and restaurant. The building is comprised of a two-storey wing and a three-storey wing, interconnected by a series of bridges and staircases. The wings are constructed of exposed heavy timber decking supported on a series of glulam post and beam frames and glulam trusses. The finely detailed feature staircase and bridges were constructed of timber and steel.

2016-2017 Showcase Awards Judges

Adam Laughlin, P.Eng.
Deputy City Manager, Integrated Infrastructure Services, City of Edmonton

Andre Corbould, P.Eng.
Deputy Minister, Environment and Parks, Government of Alberta

Bruce Cullen, B.Sc.
Director, Infrastructure and Information Services, City of Calgary

Lt.-Col. (Ret’d) Doug Wright, CD
President & CEO, Delstan Innovations Group

Ernie Hui, P.Eng.
Special Advisory on Water Quality, Environment and Parks, Government of Alberta

Dr. Fred Otto, P.Eng.
Professor Emeritus, Department of Chemical and Materials Engineering, University of Alberta

Graeme E. Langford, P.Eng.
Engineering & Project Management

Jennifer Enns, P.Eng.
Manager, Engineering and Energy Services, City of Calgary

John McNicoll, M.A.
Executive Director, Edmonton Construction Association

Ken Pilip, P.Eng.
CEO and Registrar, CEA

Konrad Siu, P.Eng.
Executive Director, Drainage Design and Construction, City of Edmonton

Lianne Lefsrud, P.Eng., PhD
Assistant Professor, Faculty of Engineering, University of Alberta

Malcolm Bruce, MSM
Chief Executive Officer, Capital Region Board

Neil Kjelland, P.Eng.
Executive Director, Procurement, Alberta Infrastructure

Ranjit Tharmalingam, P.Eng.
Assistant Deputy Minister, Alberta Transportation

Stephen Panciuk, P.Eng.
AE Practice Leader, ENCON Group Inc.

Tim Robbie, P. Eng.
Manager, Corporate HSE, Vermillion Energy
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ISL Engineering and Land Services is proud to announce the following appointment:

Chris joined ISL in 1999 and quickly became recognized as a true leader. His sound judgement, openness to new ideas and strong business acumen has built his reputation delivering outstanding transportation, municipal, development and flood mitigation projects.

With extensive experience in all facets of transportation planning, design and construction, Chris has been a part of many projects that have shaped the Calgary region. As project manager for The City of Calgary’s Macleod Trail and 162 Avenue interchange, Chris’ team is helping to deliver the first diverging diamond interchange in Canada, scheduled to open in Fall 2017.

“Chris’ experience on complex multi-discipline projects brings a wealth of understanding focused on client needs and community building,” notes Rodney Peacock, ISL’s President and CEO. “His appointment to the Board helps ensure client and community focus will remain hallmarks of our work for years to come.”

ISL Engineering and Land Services is an award-winning, full-service engineering consulting firm that is committed to inspiring sustainable thinking in transportation, land and water projects for the public and private sectors.
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