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ON THE COVER

It's no secret that Canada is one of the greatest places on Earth to live, and it's one of the best times to be involved in the construction industry. Several foundation contractors sat down and discussed working in Canada now and into the future, and what it's like to operate within our borders. Read the cover feature of this issue of *Piling Canada*, starting on page 28, and reflect on how fortunate we are to live and work in this great nation.

From Sea to Sea



As I write this, we are currently in the midst of Olympic mania, with Canada as a leading contender on the international athletic stage. In addition to competitive prowess, Canadians are making waves just by living our identity: from helping a skier from another country whose ski was damaged so he could finish a race, to using our passports to unlock fridges filled with Molson beer. Every so often, it's nice to share with the world what we all know: Canada rocks.

It's always a good time to be Canadian, and it's an especially rewarding time to be part of the Canadian construction industry. All levels of government continue to recognize the importance of infrastructure development and labour market development, and how those investments contribute to long-term economic prosperity. This translates to more projects, more jobs and hopefully more skilled workers to get those projects completed reliably, safely and on time. The New Building Canada

CONTINUED ON PAGE 4



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With every issue of *Piling Canada*, it's always my goal to celebrate what we do here within our borders, and what international companies see in the Canadian market. I'm excited to bring you this Quarter 1 issue for 2014. The cover feature, a roundtable discussion with several foundation

contractors across the country that was facilitated by Lisa Kopochinski, offers insight as to how we work in Canada, and what we expect in the near future. If you'd like to offer your own insights and/or stories, please shoot me an email. I'd love to share your thoughts with readers of *Piling Canada* in a future issue.

If you would like your company featured in *Piling Canada* or you want to share a recent or exciting project you're working on, please let me know. We're living in a competitive, challenging and ever-changing period in our

industry, and I'm excited to be able to follow along with you and share your stories. Also, be sure to check out and share the digital edition of this issue at pilingcanada.ca.

Happy reading,

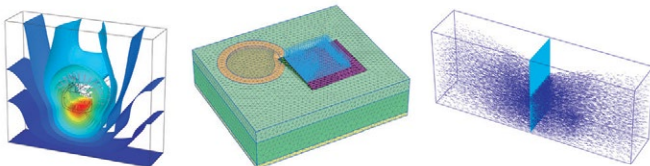
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From the Pile

Company announcements, key events and other news important to Canada's deep foundation construction industry



PHOTOS COURTESY OF KELLER

Keller has approximately 8,000 staff worldwide, in more than 30 countries. Left: Driven steel tube piles for Newcastle Coal Infrastructure Group in New South Wales, Australia. Above: Installation of driven piling through an existing floor slab at Thornton Heath, Surrey, UK.



Keller Canada remains industry leader in piling

After six months as part of the largest independent ground engineering company in the world, Keller Canada has broken a record with regards to its safety program, and their leading technologies have given them continued success in projects across the country. Keller Canada (formerly the piling division of North American Construction Group) was bought by U.K.-based Keller Group Plc. (Keller), in July 2013, though the management and operations of the company have remained the same.

“We were acquired by the Keller Group because we are a leader in piling,” said Bernie Robert, president of Keller Canada. “Our team has more than 30 years of experience in a variety of climates and soil conditions across Canada, and we have a full range of piling technologies. Now we are connected internationally and will continue to be at the forefront of the industry.”

While the company's safety program prior to July 2013 was strong, since being named Keller Canada and adopting the Keller Safety Framework, the ultimate goal is to have zero injuries through the effective management of safety in

all operations. In the last six months, the company has had no lost time injuries; in fact, no lost time injuries for more than 800,000 worked hours.

Keller Canada has over 30 years of experience in foundation installation for a wide range of projects. They are a leader in industrial projects in the oil sands and related petrochemical and refinery complexes, and they have also been involved in numerous commercial and infrastructure projects. Their extensive and diverse equipment fleet enables them to successfully complete piling projects of any size. Keller Canada currently operates out of seven regional offices across Canada, and their commitment to quality is emphasized by their ISO 9001-2008 certified quality management program.

Keller is the world's largest independent ground engineering specialist, providing technically advanced and cost-effective foundation solutions to the construction industry. With annual revenue around £1.5bn, Keller has approximately 8,000 staff worldwide, in more than 30 countries.



Junttan Oy rolls out three high-end additions to its X-Series pile driving rig family

Junttan Oy is launching three “big brothers” in its modern X-Series pile driving rig family in addition to the smaller range PMx20, PMx22, PMx24 and PMx25 rigs launched a few years ago. The new models – carrying the nickname J-reX – are the PMx26, PMx27 and PMx28, and have maximum leader capacities of 20, 23 and 25 metric tons and maximum pile lengths of 24, 25 and 28 meters respectively. This makes the PMx28 the biggest and strongest complete, purpose-built pile driving machine ever built, with a full-scaled telescopic leader and other well-known Junttan features.

The whole basic structure and component layout of the PMx26 through 28 series has been redeveloped according to Junttan’s 35 years of experience in the field, which means effortless operation and maintenance, and uncompromising safety, stability, transportability and structural strength. The hydraulic system has also been completely overhauled and Junttan’s innovative X-control system for the PMx26 through 28 series has been further developed for the most convenient and productive operation and low fuel consumption. The PMx26 through 28 series utilizes the latest engine technology to conform to the toughest international emission legislation.



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The same SAA can be used vertically, horizontally, or in arcuate shapes for measuring convergence. Short segments (30 or 50 cm) enable monitoring of huge deformations in great detail. SAA is used with loggers and wireless equipment, or PCs. Over 37,000 m of SAA have been deployed.

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It's green!

Improving operator efficiency and safety as well as minimizing energy losses within the system have been the key design goals for the PMx26 through 28 series.

Deep system integration results in reduced emissions, improved performance and improved fuel economy without compromising machine performance, allowing for seamless operation. There are several developments that dramatically minimize fuel consumption and the operator's role in it. A thermostatically-controlled engine and hydraulic oil coolers with an optimized air circulation system, together with a streamlined main hydraulic oil circuit with extended hose diameters, decrease fuel consumption by up to two litres per hour compared to previous models. The new post-compensated and load sensing hydraulic system saves another litre per hour compared to traditional hydraulic systems, and the unique PileCruise feature eliminates human factors from the total system efficiency, decreasing the power consumption of the hammer by up to 20 per cent, depending on the operator. Tier 4-certified Cummins engines are also available to further decrease emissions.

Added value for equipment ownership

Junttan recognizes that a successful pile driving process results in various economic and ecological benefits over other piling methods, each of which can only be accomplished by paying close attention to every step of the process. Close cooperation with professionals in the global pile driving industry enables Junttan to provide the most profitable solutions to make the ownership of a Junttan rig a success. Thanks to the new technologies utilized, the PMx26 through 28 series further strengthens Junttan's position as the provider of the best performing equipment: comprehensive online services for managing all pile driving and equipment-related data, various new innovations for easy maintenance, together with the well-known high resale value of Junttan equipment, makes the ownership of the new PMx26 through 28 series risk-free and convenient.

FROM THE PILE CONTINUED ON PAGE 15



PHOTOS COURTESY OF JUNTAN OY

New DNA of Junttan



J-rex

Among other predators of its age, the famous T-rex had heightened sensory abilities, more rapid and coordinated movements and - although being one of the biggest - it had more power than any other animal of same size.

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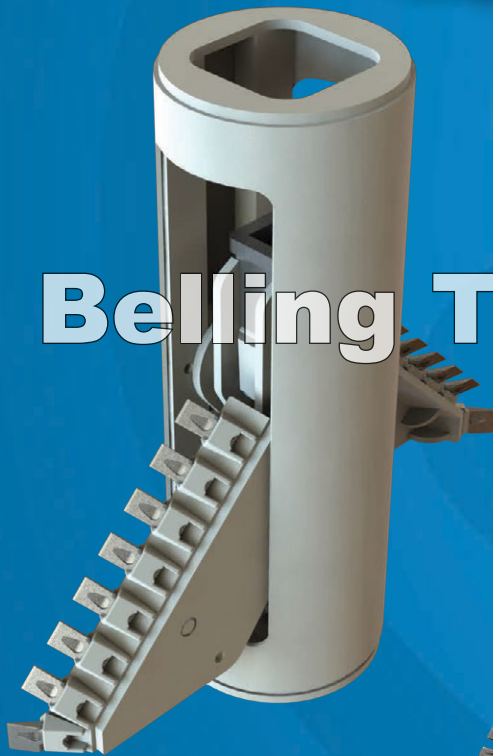
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Mega-projects mean bigger labour demand

Major energy, resource, infrastructure and commercial projects will counterbalance reduced residential activity to deliver stable workloads and escalation in 2014, according to BTY Group's annual *Market Intelligence Report* on construction costs across Canada.



Increased labour demand for skilled trades, due in part to a large number of retiring workers, will vary by region and sector.

"We expect fairly healthy levels of activity across Canada despite an anticipated general residential slowdown nationwide, except [for] Alberta and British Columbia," said Joe Rekab, managing partner at BTY Group. "Large – and often remote – energy and resource projects, with renewed infrastructure spending, will also spur increased labour demand in some regions."

In Ontario, strong mining investment in the north, renewed horizontal and vertical infrastructure spending and sustained commercial construction in the GTA will keep workloads stable.

Still-strong oil sands investment, flood reconstruction, record high in-migration and a commercial building boom will help sustain Alberta's robust construction activity and drive Canada's strongest residential growth.



A full copy of the BTY Group's report can be accessed at www.bty.com/category/market-intelligence-newsletter



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Mega-projects, such as Saskatoon's Circle Drive South Project, spur an increase in labour demand, according to BTY Group

Continuing investment in transportation and healthcare infrastructure and multibillion-dollar mining and energy projects will help Quebec regain momentum.

Sustained investment in resource and energy development and continued high levels of in-migration will see Saskatchewan keep its place as a growth leader – with strains on labour supply.

Strong shipbuilding and commercial construction, and healthy in-migration that sustains residential activity, will keep B.C. humming as massive LNG and hydro projects get underway and propel the province to solid long-term growth.

BTY Group has been publishing its annual industry review of construction cost forecasts across Canada since 2003. Over the years, the *Market Intelligence Report* has earned a reputation in the development, property and finance communities for crucial insight on factors behind the changing marketplace and reliable unit rate cost projections for the coming year.

A full copy of the report can be accessed on BTY Group's website at www.bty.com.

New P3 bridge will reinforce Canada's "best-in-class" reputation

The announcement by The Honourable Denis Lebel, Minister of Infrastructure, Communities and Intergovernmental Affairs and Minister of the Economic Development Agency of Canada for the Regions of Quebec, that the new bridge for the St. Lawrence will be built as a public-private partnership (P3) recognizes the critical importance of the Champlain Bridge as a \$20-billion annual trade corridor and vital transportation artery for Quebec and Canada. The Government of Canada has released the PricewaterhouseCoopers (PwC) business case confirming that a P3 will provide the most cost-effective method to deliver the project within an accelerated timeline.

"The Canadian Council for Public-Private Partnerships (CCPPP) strongly endorses the government's decision to move ahead with the project using the P3 model and expediting the process, given the pressing need for a safe, reliable, world-class crossing for residents and businesses in the Montreal area," said Mark Romoff, president and CEO of CCPPP. "The project will also create thousands of

jobs, stimulate the economy and provide long-term value to taxpayers."

Over the last 20 years, jurisdictions across Canada have successfully used the P3 approach in 205 projects, with those in operation or under construction worth more than \$60 billion: bridges, roads, urban transit, hospitals, airports, schools, social housing, courthouses, detention centres, water and wastewater. The vast majority of these projects have been delivered on time and on budget, generating significant cost savings for governments at all levels, while creating jobs and growing Canada's economic prosperity and global competitiveness. Governments around the world are looking to replicate the Canadian "gold standard" approach, creating opportunities for Canadian companies with P3 experience and expertise. The new bridge for the St. Lawrence promises to be yet another in Canada's long list of successes.

About CCPPP

Established in 1993, CCPPP is a national not-for-profit non-partisan, member-based organization with broad representation from across the public and private sectors. Its mission is to promote innovative approaches to infrastructure development and service delivery through P3s with all levels of government. CCPPP is a proponent of evidence-based public policy in support of P3s, facilitates the adoption of international best practices and educates stakeholders and the community on the economic and social benefits of public-private partnerships.

Industrial Parts Depot (IPD), LLC and BU Drive USA, Inc. announce joint venture turbocharger supply company

Industrial Parts Depot (IPD), LLC and BU Drive USA, Inc. are excited to announce the creation of a joint venture (JV) company named IPD Turbocharging Systems™. This new organization will focus on sales and service for the distribution of BorgWarner, Holset, IHI and Mitsubishi turbochargers, and will provide IPD Remanufactured Turbos.

"Turbochargers are a core component for the servicing requirements of IPD's global distribution network, and are an ideal complement to IPD's growing product portfolio," said Russell Kneipp, president of IPD. "IPD has been involved for



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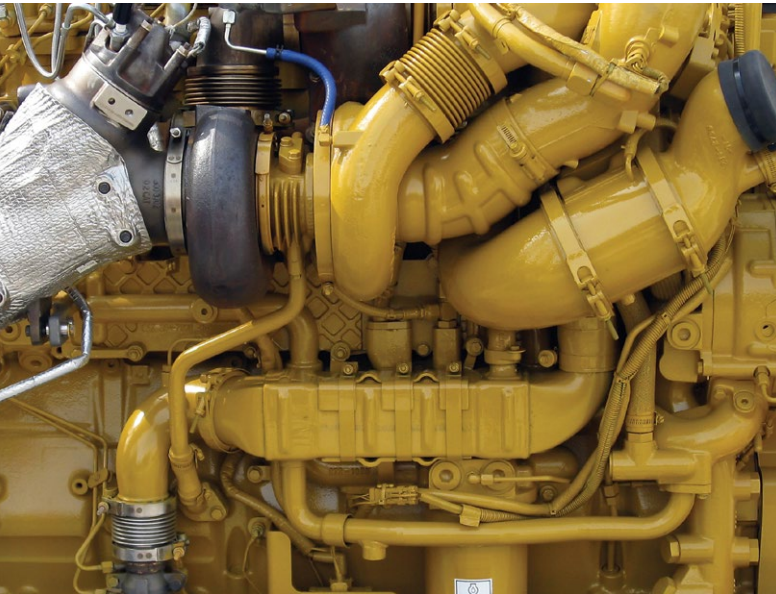


PHOTO COURTESY OF IPD

IPD focuses on parts for engines, such as the Caterpillar® C15 Acert engines shown here

decades in the turbocharging industry, and this new JV with BU Drive USA provides IPD with the opportunity to offer our customers a range of turbochargers with the level of service and quality that they demand.”

Jack Lorimer, CEO of BU Drive USA, added, “The combination of BU’s turbocharger and remanufacturing technical expertise worldwide, along with IPD’s sales, distribution, manufacturing and quality processes, is a recipe for success in the critical and complicated business of turbocharging.”

For information on IPD, please visit www.ipdparts.com.

New staff member at Jeffrey Machine, Inc.

Mary Pohlman has recently joined Jeffrey Machine, Inc. as the company’s new international sales representative. She brings 13-plus years’ experience in the foundation drilling and construction industry. Pohlman has been previously successful at building solid relationships with contractors and is expected to continue that success in her new position.



Her extensive marketplace knowledge has helped to accurately identify customers’ needs. It also helps the manufacturing team to develop the right drilling tool solution for their job sites. Her broad understanding of the foundation tooling industry will help to extend Jeffrey Machine’s excellent customer service into the international marketplace.

For more information about Jeffrey Machine, Inc., visit their website at www.jeffreymachine.com. ☺

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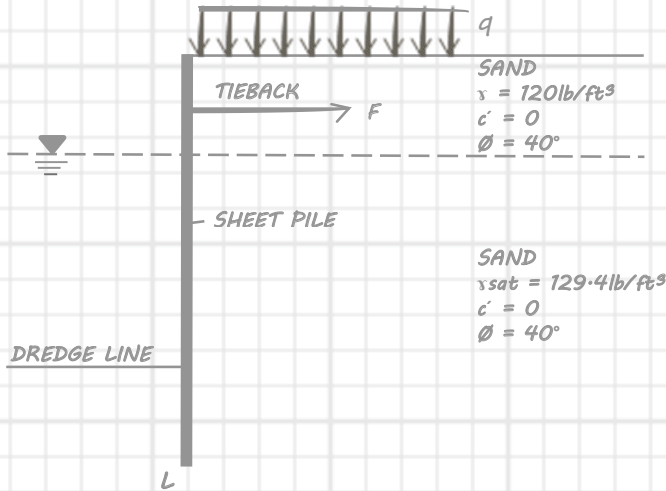
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RESULTS FROM SOFTWARE ANALYSIS

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 ANCHOR FORCE (F) = 6 kips/ft
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 (Fa = .50 x _____ ksi for steel grade)

$$S_x = M_{max} / F_a$$

$$S_x = 84 \text{ kip-ft/ft (12in/ft)} / 25 \text{ ksi} \longrightarrow 40.3 \text{ in}^3/\text{ft (A572 GR 50)}$$

NOTE: JD FIELDS EXCLUSIVELY SUPPLIES HOESCH 700mm SERIES IN MIN 60ksi YTM GR 60!
 Determine (Sx) for Fa = 60 ksi

$$S_x = 84 \text{ kip-ft/ft (12in/ft)} / 30 \text{ ksi} \longrightarrow \underline{33.6 \text{ in}^3/\text{ft (A572 YTM GR 60)}}$$

STEP 2) COMPARE AVAILABLE HOT ROLLED Z-SHEET PILE SECTIONS.

(MATERIAL MUST BE STOCK SECTION FOR QUICK DELIVERY.)

SECTION	WEIGHT	GRADE	Sx
AZ 26-700	30.1 lb/ft ²	50 ksi	48.4 in ³ /ft
PZC 26	37.8 lb/ft ²	50 ksi	48.4 in ³ /ft
PZ 35	35.0 lb/ft ²	50 ksi	48.5 in ³ /ft
H 1907	23.3 lb/ft ²	60 ksi	34.7 in ³ /ft *

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Near-shore tests in August 2013

BLUE Piling Technology

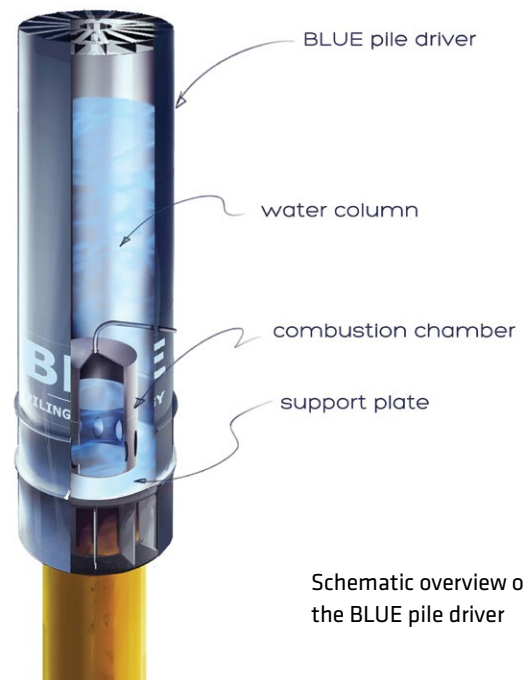
The future of offshore piling: bigger, deeper, quieter

By Judy Penz Sheluk

In Europe, offshore wind turbines have become an accepted technology for producing energy. Although offshore wind is not yet used in Canada and the U.S., America's first offshore wind farm, Cape Wind in Nantucket Sound, Mass., is planned for 2014.

Offshore wind turbines are typically mounted on monopile foundations, large steel tubes with a diameter of four to seven metres and around 50 metres long, which are then hammered into the soil with large hydraulic hammers. While effective, this installation technology has some significant drawbacks. Because the turbines tend to get bigger and are installed in ever-deeper water, the monopiles need to get bigger, which in turn demands the ram and anvil to be bigger and heavier. Global production capacity for exceptionally large parts such as these is limited and the prices are high.

The use of conventional hydraulic hammers, which create a high peak force within a short time span, also poses significant ecological concerns with regards to marine life. As a result, their use has been restricted in many countries, although the type of legislation varies per country. In Germany, for example, there is a strict norm that must be



Schematic overview of the BLUE pile driver

PHOTOS COURTESY OF FISTUCA BV

“Because the mass of the water column is much larger than a conventional steel ram, the force pulse of BLUE Piling Technology is much longer. This results in more soil penetration per blow and lower noise emissions.”

– Jasper Winkes, M.Sc., Founder, Fistuca BV

met, while in The Netherlands, there are seasonal restrictions, permitting pile driving only half of the year. In general, the current trend in Europe is legislation getting stricter.

Worldwide, most countries have general legislation on the protection of wildlife. In Canada, there is the Species at Risk Act, where the mitigation measures to be applied are defined per project in the permit by the legislator, usually after an ecological impact study.

Triggered by the problems encountered with conventional offshore pile driving technology, Jasper Winkes, M.Sc., and his business partner, Bart Genuit, M.Sc., were determined to invent a better way. The two men form the management team of Fistuca BV, a young company based in The Netherlands. The company was founded in 2008 by Winkes as a spin-off from the faculty of Mechanical Engineering at the Eindhoven University of Technology (TU/e) and is developing innovative solutions for the foundation industry. Genuit, a graduate from TU/e in 2011, has been with the company since its inception.

Both men bring their own unique perspective and expertise to the business. Winkes’ specialties include combustion, mechanical design, creative thinking and managing technical innovations; Genuit’s focus includes dynamic modeling, control design, software engineering and data analysis.



The series of tests were successful and provided more insight into the pile driving properties and underwater noise emissions of the technology

Understanding BLUE Piling Technology

In 2011, under the direction of Winkes and Genuit, Fistuca BV invented BLUE Piling Technology (patented), a revolutionary new technology aimed at reducing both the costs and emitted noise of piling offshore foundations.

“Hydraulic hammers make use of a steel ram, which is dropped onto an anvil resting on the pile, creating a force impulse that drives the pile,” said Winkes. “To reduce the underwater noise, complicated measures need to be taken to lower it to acceptable levels for sea life, significantly increasing the costs of installation. That cost is naturally passed on to the end user, making it an expensive process.”

Instead of a steel ram, BLUE Piling Technology uses a large water column inside a steel tube. This water column is supported by a horizontal steel plate, and on this plate, a combustion chamber is placed. A gas mixture is injected into the combustion chamber and then ignited. The rapid

BLUE
PILING TECHNOLOGY



CONTINUED ON PAGE 24



The result of near-shore tests in August 2013; two piles (one 2.2 metres and one 0.7 metres in diameter) driven using BLUE Piling Technology

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TECHNOLOGY UPDATE

combustion of the gasses creates an increase in pressure, since the high mass of the water keeps the gasses from expanding freely.

“The pressure increase pushes the water upwards and simultaneously drives the pile downwards into the soil,” explained Winkes. “When the water falls down again on the support plate, it creates a second force pulse, driving the pile even deeper. This cycle is repeated until the pile reaches its desired depth. Because the mass of the water column is much larger than a conventional steel ram, the force pulse of BLUE Piling Technology is much longer. This results in more soil penetration per blow and lower noise emissions.”

BLUE Piling Technology can be applied in multiple ways; it can be used for jacket piles as well as (XL) monopiles, allowing for more silent, cost-effective and faster installation of piles. Even concrete piles are considered a serious option. Moreover, BLUE Piling Technology is well scalable, so there are virtually no limits to the amount of energy and force that can be delivered.

“In August 2013, a consortium of Fistuca BV, Van Oord and TNO performed a series of successful tests at a shipyard of Van Oord in Zuilichem, The Netherlands,” said Winkes. “The tests were done next to the river Waal, where two piles were driven from the quayside into the riverbed. These tests gave us more insight into the pile driving properties and underwater noise emissions of the technology.”

During the tests in Zuilichem, one open-ended pile of 2.2-metre diameter and one closed-ended pile of 0.7-metre

First [test] results indicate a significant sound reduction of over 25 decibels.

diameter were driven, while the driving parameters and underwater noise emissions were measured.

The pile driving analysis was performed using the Profound PDA/DLT-system, consisting of two sets of combined strain and acceleration sensors. The water pressure in the column near the bottom of the support plate was measured using pressure transducers. Acoustic measurements were performed using hydrophones. First results indicate a significant sound reduction of over 25 decibels, which means that BLUE Piling will most likely comply with even the strictest regulations offshore. In this case, expensive noise mitigation measures would no longer be required.

The tests were financially supported by a grant from the Top consortium for Knowledge and Innovation Offshore Wind (TKI-WoZ) of the Dutch government. This grant will be used for further development of the technology in a two-year joint project of Fistuca BV, Van Oord OWP and TNO. In the coming months, Fistuca BV will further develop and test this technology to bring it onto the market in 2015.

For more information, including a video of the test results, visit www.fistuca.com. 📺



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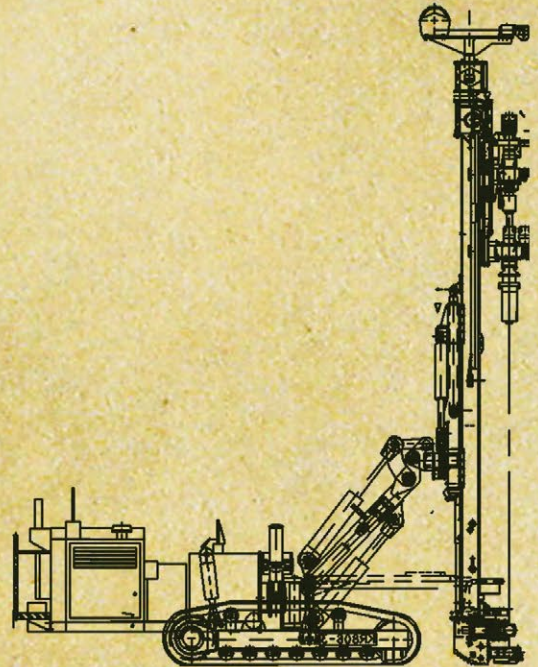
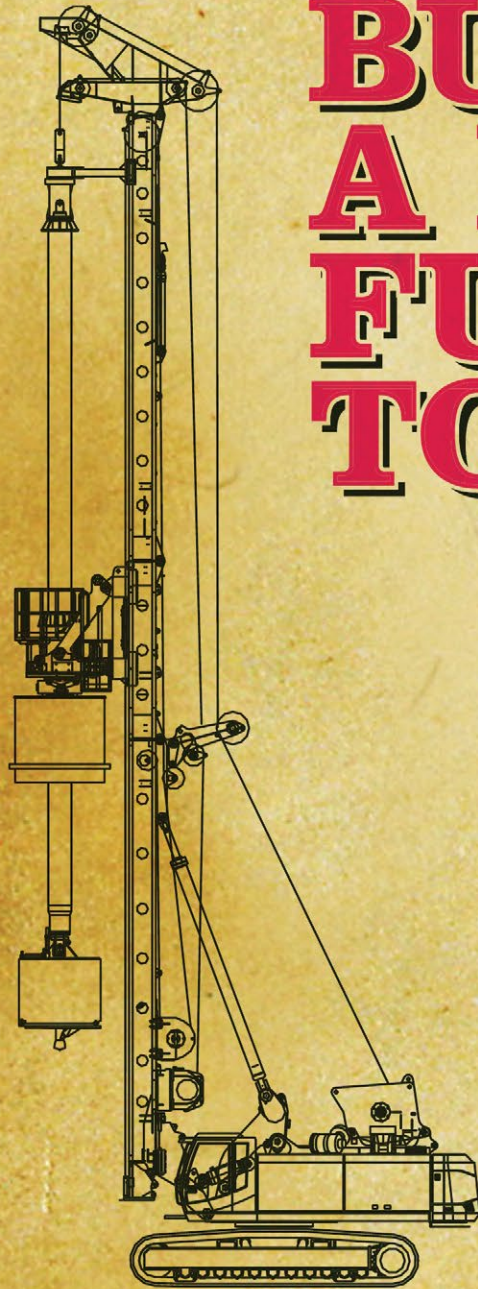
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OH, CANADA!

Deep foundation construction in our great nation

By Lisa Kopochinski

Although the piling industry in Canada is relatively young, the history of piling as a technique can actually be traced back to the fourth century B.C., when Herodotus, the Greek writer and traveler, recorded how the Paeonians lived in dwellings erected on lofty piles driven into a lake bed.

Other references to ancient piling include lake dwellers in Switzerland, who approximately 6,000 years ago were thought to have built structures on piled foundations to elevate dwellings to protect the occupants against attack. Not to be outdone, Greek and Roman engineers used piles along the Mediterranean coast. Early records show that piles were formed by using timber branches that were trimmed down with a small diameter at the bottom. They were driven into the soil as deep as the ground would allow.

The industry has come a long way. And while piling today is largely steel and concrete, the one thing that remains constant is that piles continue to be used as deep foundations to support many types of structures and in many types of ground conditions.



“To stay competitive and to stay on everyone’s radar to receive opportunities, it’s very competitive. Piling contractors now are no longer focusing on just one type of pile installation or foundation that they specialize in.”

– Tony Evangelista, Northstar Inc.

\$42-million Eastern Alberta Transmission Line Project (EATL).
Owner: ATCO Electric;
General contractor: Valard Construction;
Start date: May 2013;
Scheduled completion date: June 2014

Piling Canada set out to learn more about the industry today and recently sat down with a number of Canadian piling and deep foundation contractors (from both small and large companies) to get their take on the industry, how it has changed, where it is going and much more.

A special thanks goes to the individuals who took time out of their hectic schedules to offer their insights in our roundtable discussion: Tony Evangelista, business development manager with Northstar Inc., which has offices in British Columbia, Alberta and Saskatchewan; Stan Higgins, owner of Postech Winnipeg; Wolf Kraft, president of Wayne's Backhoe Service in Victoria Beach, Man.; Roger Mann, owner of Breakaway Drilling and Blasting in Yellowknife, N.W.T.; and Mike Nightingale, vice president of West Shore Constructors Limited in Vancouver.



PC: How is Canada's piling industry faring today as compared to the past five to 10 years? How has the industry changed?

Evangelista: Competition is very healthy. It's more competitive than it's ever been. For us, it has been a very busy year. Bidding is tight and margins are tight. The way we estimate bids is really close. I think a lot of this is the pace. You have just enough time to get a project finished and you're looking at the next one. To stay competitive and to stay on everyone's radar to receive opportunities, it's very competitive. Piling contractors now are no longer focusing on just one type of pile installation or foundation that they specialize in.

Mann: Today there are bigger sized diameter piles. There are more six-inch and eight-inch piles when it used to be four- and five-inch piles. I think this has to do with getting fewer piles, but of a bigger size. The industry is also more competitive because there is new technology, which makes it easier.

Higgins: It is difficult to answer this question as we have only been active in the industry in the past couple years. I can testify that more and more engineers and building officials seem to appreciate the return on investment that deep foundations offer.

Nightingale: We have been fortunate in the fact that the government has invested heavily in infrastructure since 2008, while the private sector has been quite slow.

PC: Please explain one piling/deep foundation project your company has worked on, and what did it entail?

Evangelista: In terms of volume and dollars, probably the largest project we have been involved with has been going on for over a year. It's a project for ATCO Electric and is known by its abbreviation – EATL – Eastern Alberta Transmission Line. It's a job we're doing for Valard Construction. This project entails constructing a 500-kilovolt transmission line from Edmonton to Calgary, with a number of substations. Our end alone will be about 15,000 driven piles. All the concrete



PHOTO COURTESY OF STAN HIGGINS

A house in Garson, Man. that was built 100 per cent on Postech screw piles

foundations are being done by Valard. It's a massive project – approximately \$40 million for the driven piles. This project began last summer and is scheduled to conclude this summer.

Higgins: A customer required a deep foundation for a two-story dream cottage they were building. The land this customer purchased appeared to be a true gem – prime waterfront in a well-established cottage community at a great price. Upon a geotechnical investigation, an underground water supply was discovered at 14 feet below grade – the reason this site had changed ownership several times without ever being developed. In Manitoba, a traditional friction pile will typically exceed that depth and the customer was looking at a very expensive foundation. Using custom oversized helicals, we were able to achieve the required capacities well below frost and well above water resulting in an effective foundation alternative at a fraction of the cost.



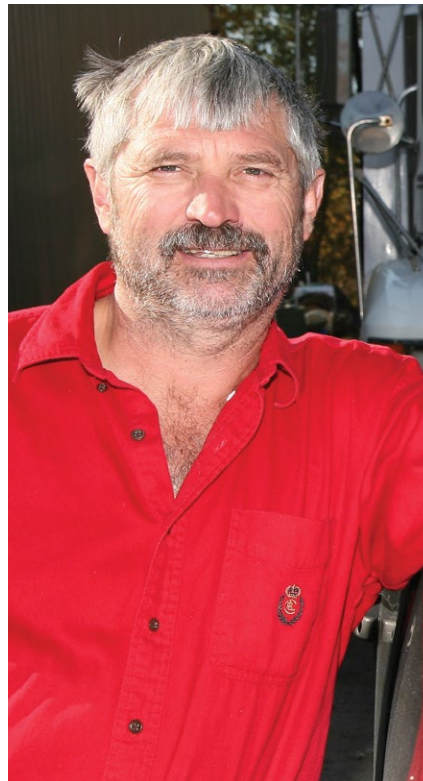
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“The one thing I have learned is that when it comes to the word ‘engineering,’ a lot of people get scared away. If you have an idea and you know how to take it to reality, that is what engineering is all about.”

- Wolf Kraft, Wayne’s Backhoe Service

Kraft: The last project we worked on was where the person had built a roadway down to the shoreline. It was about a 60-foot cliff. We had a major storm in 2010 that eroded the base of his road that led to the boathouse. We had to rebuild the road and prevent it from eroding so we used vinyl sheet piling. It wasn’t a huge project – about \$200,000 – and encompassed 200 feet of sheet piling and then the roadwork that went along with rebuilding that. Also, this year we are expanding and entering the screw anchor pile market. We just signed on with a major European manufacturer of a screw pile. Until we finalize the deal, I cannot divulge more information. This just happened so we are moving forward.

Mann: We did two eight-inch pile projects in 2012 – one that is 100 kilometres out of Yellowknife and one in town that was a government office building. One project was 200 piles and the other was 115 piles. We worked on one for five weeks and the other took three weeks.

PC: What do you like most about the deep foundation construction industry?

Evangelista: I’ve always said that if this is my last job, I would be a very happy guy. It’s always changing. We’ve done piles for hospitals, schools and banks. You don’t come in and sit at your desk and know what you did yesterday is what you are going to do today and what you are going to do tomorrow.

Higgins: What I like most is that, as a company in the deep foundation construction industry, we are helping customers maximize the return on investment on their building projects. Often a building project is a reflection of a customer’s blood, sweat, tears and dreams. Whether it be a family home, cottage or place of business, they are significant investments. In Manitoba’s expansive soils and extreme climate, building without piles puts a customer at risk of long-term issues and major repairs at an expense, which nearly always outweighs an initial investment in a deep foundation.

Nightingale: I would say the people and the challenges.

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Eastern Alberta Transmission Line Project (EATL)

Mann: I like drilling and blasting. It's a big industry here in Yellowknife. And there's no shortage of work. We've been pretty much busy since 2007. We've been going nonstop. The projects vary. It's a mix of residential construction and government projects. It's good, but there's no break.

PC: What is one of the largest challenges your company has faced in the piling industry and how did you overcome it?

Evangelista: We feel the number one challenge is ensuring that we complete all projects to Northstar standards. This all starts with the right personnel. The pace is nonstop so it's really about staying on top of all of the work out there. Across the board, piling contractors have to install two, three or four different types of foundations. We started off with driven

piles and moved very quickly into doing helical piles and we're getting into concrete piles. Different construction sectors often call for different types of foundations, and different applications. If you can approach a problem with multiple solutions, you're better off. Growth is going to come from completed projects. Doors of opportunity open and it continues to spiral. Again, the key challenge is making sure we can go after all of those projects with the best crews we can.

Kraft: We have diversified. Our last big project was a boardwalk in Grand Beach, Man. that had been destroyed during a storm. The government has been rebuilding it, but we did an architectural rendering of a railway bed that was embedded in concrete. We rebuilt a sundial that had been there for 50 years. So these are the kinds of projects we are taking on in addition to the pile driving industry.

Higgins: Our largest challenge is educating building officials, architects, engineers and contractors to the design of foundations using screw piles. Although we are pioneering a proven technology with a track record nearly two centuries old, the concept is new to Manitoba. Reluctant to look at alternatives to “the way it’s always been done,” most folks in the construction industry are not taking initiative to learn about screw piles. However, one project at a time we are opening eyes and minds to the technology and steadily increasing awareness and credibility.

Nightingale: Finding competent crane operators has been a challenge over the years. We have concentrated on training present employees to meet our needs.

PC: Where in Canada has your company performed piling work?

Evangelista: Right now, we’re completing work in northeastern British Columbia, Alberta, Saskatchewan, Manitoba and we were just awarded a large project in Newfoundland and Labrador.

Higgins: Our Postech Screw Piles dealership has performed piling work throughout Winnipeg, rural Manitoba and our beloved cottage country, including northwest Ontario. Postech’s more than 60 dealers across Canada have completed piling projects in a wide range of Canadian soils and climates from coast to coast.

Nightingale: The majority of our work has been in the lower mainland of British Columbia, [but also] Alberta and the Yukon.

PC: Do you place a focus on using Canadian talent, materials and equipment?

Evangelista: We have personnel from all across Canada. For materials, it all depends on the project requirements; we source domestically as well as offshore. For equipment, we have our patented EXCA-Driver, which is our excavator mounted pile driver that is built here in Canada, and is patented in various countries in the world. As this work is very unique and we also have various suppliers from across the world, we can always be competitive with the most up to date piling equipment available.

Higgins: Absolutely. Canadian materials are built for rough and tough life in Canada and can brave the weather and terrain. Much like our materials, Canadian workers are built tough and don’t run for the hills when the going gets tough and the job needs to get done.

PC: What has been one your most “Canadian” experiences in your business?

Evangelista: Almost all of the companies we compete with are Canadian. There is one company that brings its equipment up through the States, but for the most part, all of the piling and foundation companies that we work beside

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COVER FEATURE

and compete against are Canadian. There are a very finite number of piling contractors. Surprisingly, there are not a lot of small, mid- to large-sized companies out there doing continual work. There are more in Western Canada. Competition is very healthy.

Higgins: We don't kick back and rest our feet in the winter months. It's not always easy and after long days in sub-zero weather, our team and equipment come back weathered and beat from an extreme day at work. With this comes pride and character that could only be built in Canada. Last year, we came across unforeseen weather and soil challenges while installing screw piles in a remote lake for a dock and boat-house. Determined to get the job done, the team decided to work into the night, stay in the frigid non-insulated cabin and continue work at the crack of dawn. With the sun down, half the team made it their mission to catch dinner on the lake and the other half gathered wood to heat the cabin. What made this experience truly Canadian was the fact that the team saw this as one of the more enjoyable projects completed to date.

PC: What advice can you offer to other Canadians looking to start up their own construction business?

Kraft: I would absolutely tell anyone to go for it! The one thing I have learned is that when it comes to the word "engineering," a lot of people get scared away. If you have an idea and you know how to take it to reality, that is what engineering is all about.

Evangelista: Operate your business with integrity; people make the company, so ensure they are part of the team and stay focused on your core business.

Higgins: Make sure you have what it takes to deliver an exceptional customer experience. Canada is really a small country and it doesn't take long for word to travel. This can mean disaster for those who deliver a poor customer experience. The good news is that word travels fast also for those who deliver an exceptional customer experience. Lastly, research your services and products to ensure they are built tough for Canada's extreme climates.

PC: Where do you think the industry is headed in the near future – two to five years?

Evangelista: I see more consolidation in the industry so companies can offer more diverse piling services and are large enough when combined to compete on large scale projects.

Higgins: We believe that the deep foundation industry has a promising future. More and more, the benefits of deep foundations are promoted in Manitoba with many building officials and engineers insisting on them. Although piles can't be seen, the general public is beginning to see value in having a home or cottage built on pilings. Many of our customers take pictures of their Postech screw pile foundation so that in the future, when selling the property, they can showcase the piled foundation to potential buyers and drive up the selling price.

Mann: I see the industry planing out. A lot of our drive here is by government. There is the mining industry here, which is expanding. The housing market is stable so I don't see a lot of new expansion here. There's been a rapid growth, but I think it is going to plane out. 🇨🇦

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In 2014, *Piling Canada* wants to really celebrate our industry in this wonderful nation.

What makes your job in your location so great? What kinds of projects on Canadian soil have you been working on that put your company on the map? What makes Canada stand out for you? Let's celebrate you!

Send an email to Jill Harris, editor of *Piling Canada*, and your comments, thoughts and ideas can be published in an issue of the magazine this year. Send emails to jharris@lesterpublications.com. We can't wait to hear from you!



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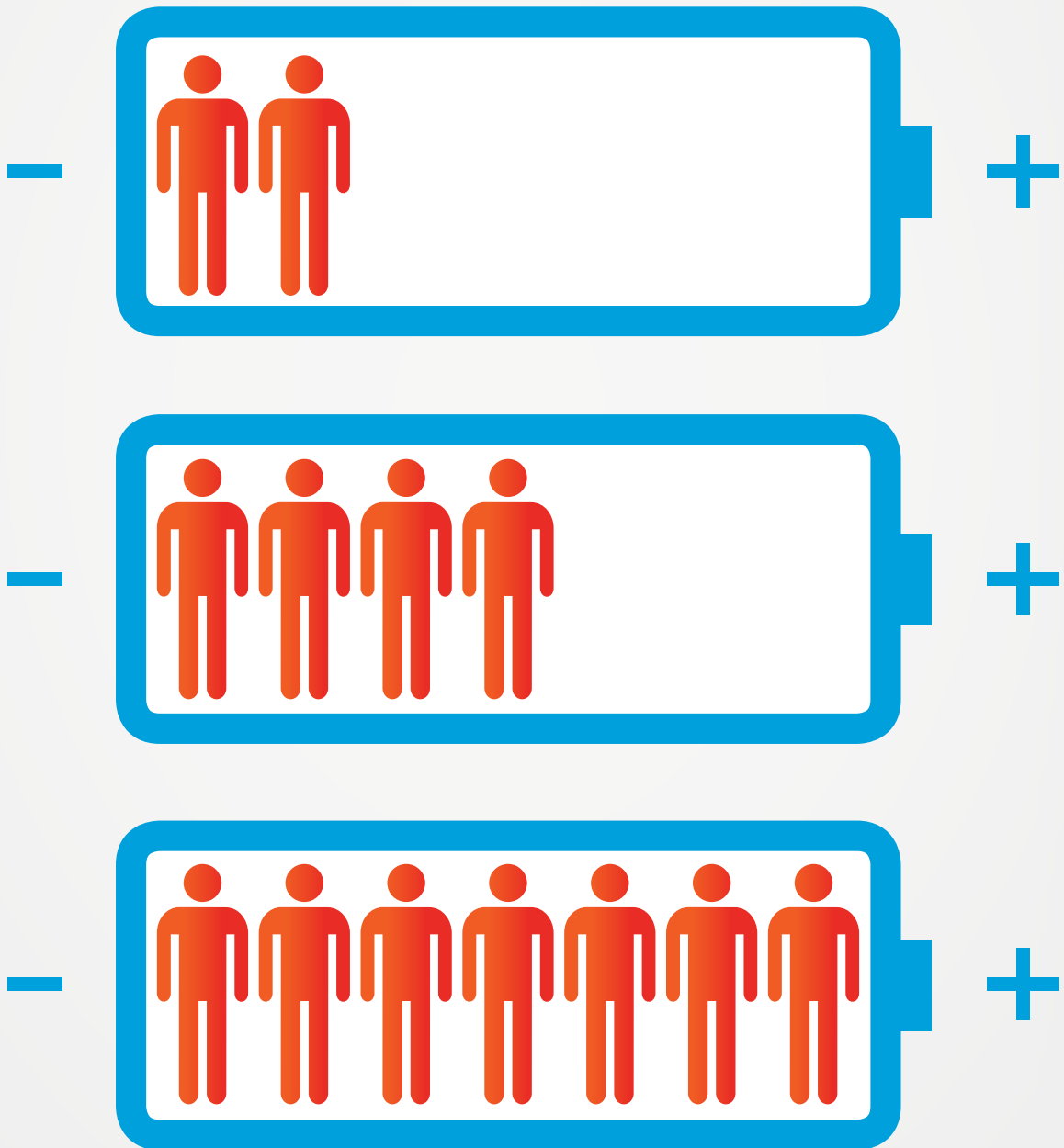


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WHERE ARE THE WORKERS?

Worker mobility and retirements will affect construction industries for Canada's East Coast

Submitted by BuildForce Canada



As opportunities arise in other locations and the Baby Boomer generation inches closer to retirement, many industries are facing an impending labour shortage in the coming years. In February 2014, BuildForce Canada released the *2014-2023 Construction and Maintenance Looking Forward* forecast, and shared findings about the construction industries in our East Coast provinces – New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland and Labrador – with *Piling Canada*.

As a skilled labour shortage looms on the horizon, now is the time for Canadians in the construction industry to implement plans to recruit, train and retain workers. For more information, turn to the HR Department column starting on page 71 of this issue of *Piling Canada*, and read Barbara Bowes' advice on how to help your business pull through by making sure you put your people first.

New Brunswick construction industry must focus on rebuilding workforce

Planning for major new projects will be a top priority for New Brunswick's construction industry, as retirements and out-of-province projects draw on the skilled labour pool, according to BuildForce Canada.

The *2014-2023 Construction and Maintenance Looking Forward* forecast shows a moderate decline in construction employment over the next two years before the start of new major engineering projects create employment opportunities in 2016. Across the outlook scenario, industry faces the growing challenge of an aging workforce, with as many as 6,000 skilled tradespeople, or 28 per cent of the current labour force, expected to retire.

"Replacing retirees and building up the workforce is essential," said Rosemary Sparks, executive director of BuildForce Canada. "The goal is to be ready when specialized workers are needed for pipeline, mining and marine terminal projects are starting in 2016."

These projects may also involve recruiting New Brunswick's skilled trades back from other provinces and/or hiring a temporary workforce from outside the province.



The forecast also shows that proposed new major industrial and engineering projects translate into strong demand from 2016 to 2018 for a selected group of trades and occupations with specialized skills and experience. New Brunswick also faces competition for skilled labour from resource projects in Western Canada, including current and new projects in Alberta and British Columbia over the near term, as well as immediate opportunities in Newfoundland and Labrador.

"The challenge is convincing skilled workers to stay and others to come back when projects at home ramp up," added Sparks. "That's why now is the time to focus on recruitment, training and retaining a skilled labour force."

Young recruits key to building Nova Scotia's construction industry

With many workers retiring over the next decade, Nova Scotia's construction industry will need to step up efforts to attract more young people.

BuildForce Canada's forecast shows modest employment growth at the same time as the industry faces an increase in retirements and out-of-province resource projects.

"Up to 25 per cent of the workforce will be retiring over the next decade, creating a real need for young, skilled workers," said Sparks. "There is a lot of opportunity in construction, making it a great career choice for young people."

Employment opportunities will shift to industrial and utility projects, with commercial, industrial and utility construction supporting current levels of employment. Modest job growth and equal gains and losses will balance activity in most years to 2023.

Nova Scotia also has an older than average workforce, which adds to the pace of retirement. Just over 6,600 workers will likely be retiring over the next 10 years across all 33 trades and occupations tracked.

"Projects in other provinces and industries, such as shipbuilding, also create skilled labour challenges for the construction industry," said Sparks. "This is the new reality that makes recruiting, training and retaining a skilled construction workforce more important than ever."



"There is a lot of opportunity in construction, making it a great career choice for young people."

– Rosemary Sparks, Executive Director, BuildForce Canada





Confederation Bridge, Prince Edward Island

P.E.I.'s construction industry must convince skilled workers to stay

Keeping skilled workers at home will be a major priority for Prince Edward Island's construction industry to help counter rising retirement rates. The forecast shows retirement losses cannot be entirely offset by young people entering the workforce for the first time in the province.



"With as many as 1,500 workers retiring over the next 10 years, attracting, training and retaining a skilled workforce is more important than ever for the local construction industry [in P.E.I.]," said Sparks. "It will take real planning to replace the rising number of retirees."

Labour requirements will rise with new investment in industrial and utility projects and commercial and institutional building, helping to reduce unemployment rates to below average levels in 2015 and 2016.

"The real challenge will be encouraging skilled workers to stay, and convincing others to return home when conditions improve in 2015," added Sparks. "That's when retirement pressures really set in and the province will need a larger skilled workforce to draw on."

Retirements and resource boom test Newfoundland and Labrador's construction industry

Labour requirements of large resource projects, coupled with the retirement of almost 25 per cent of the




province's workforce over the next decade, create complex challenges for the construction industry in Newfoundland and Labrador.

The *2014-2023 Construction and Maintenance Looking Forward* forecast shows the main challenge is recruiting for several large and remote resource and infrastructure projects. Between 2007 and 2012, provincial employment grew by 70 per cent, with the vast majority hired for resource projects. Construction employment reached a record high in 2013 and will continue into 2014, before these projects wind down and many workers move on to jobs in other provinces.

"That's what the construction industry [here] really has to prepare for," said Sparks. "Some of these workers will need to stay for ongoing projects, capital and maintenance work, and to replace as many as 4,700 retirees over the next 10 years."

Commercial and institutional building is closely linked to the provincial economy with steady but moderate growth expected, while industrial and engineering construction rises and falls with investments in mining, electricity generation and transmission and offshore oil projects.

"Industry has worked hard to keep pace with changing demands," said Sparks. "Recruitment plans will need to be continually adjusted and tailored for each trade and occupation, to counter worker mobility and rising retirements."

BuildForce Canada is a national industry-led organization committed to providing accurate and timely labour market data and analysis to assist in meeting workforce requirements and advancing the needs of Canada's construction industry. BuildForce consults with industry stakeholders, including owners, contractors, labour groups and government to compile and validate its labour market information. Visit www.constructionforecasts.ca. 

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State *of* the Art



The site of Saskatchewan's Remai Art Gallery, expected to be completed for a spring 2016 launch date

PHOTO COURTESY OF BIRMINGHAM

By Vanessa Kunderman

Birmingham contributes to the construction of a culture-boosting art gallery in Saskatchewan

Saskatoon has always been a *can-do* city. In the 70s, when Saskatoon wanted to host the Canada Winter Games, the flat prairie province didn't even shudder at the thought of building a mountain for skiing.

When the idea for an agrarian-inspired world-class art gallery came across the desks of city council, the Rемаi Art Gallery was an unquestionable new project.

Saskatoon has always had strong cultural interest; the orchestra, theatre and street festivals are just small blades in this province's massive crop of culture, and according to www.remai.ca, "74 per cent say Saskatoon's growing city needs a cultural facility."

Thanks to the Energy Boom from recent years, Saskatchewan's population has tipped over the one million mark, with most of the inhabitants flocking to Saskatchewan's largest city, Saskatoon. The booming population has further increased the province's lust for the arts, even more so than its colourful history.

Named for Saskatchewan philanthropist, Ellen Rемаi, the Leadership in Energy and Environmental Design (LEED) Silver Certified Gallery is a piece of architectural art, itself. With high-performance, eco-friendliness and sustainability at its core, the gallery has already accumulated architectural awards.

The real task at hand was building the structure.

Birmingham retained designer Matthew Janes of Isherwood and Associates to design a key component to the project: the shoring wall. Despite the vast beauty of the landscape being the main influence and inspiration for the design of the new gallery, the province's flat topography poses risks for flooding. The Rемаi Art Gallery is nestled in along the Saskatoon riverfront and the wall was a necessary component to the gallery's practicality. As one of the largest shoring walls being constructed in Saskatoon at the time, the project garnered its fair share of attention.

Birmingham was brought on the project to construct the caisson wall which facilitated construction of the foundation for this new art centre. The working area needed to remain dry, creating the need for the watertight structure thanks to the risky landscape. The foundational details that Birmingham saw to fruition are just a small part in the construction of the highly anticipated gallery, but without them the project would never get off on the right foot, let alone stand tall.

The undertaking not only expanded Birmingham's visibility in Saskatchewan, but it proved they were capable of much more than just identifying as a pile driving and drilling company.

"Everybody out there in the drilling community was there watching us drill. It was really incredible," said Birmingham's contracts manager, Andrew Weltz. "It was interesting to see just how many people were captivated by the project – we were quite flattered."

Project Partners

- **Shoring Design** – Isherwood and Associates
- **Concrete Supply** – Cindercrete
- **Anchor Supplier** – Contech Systems
- **Structural Steel Supplier** – Skyline Steel, Dominion Steel and Dymin Steel

Birmingham was brought on the project to construct the caisson wall, and their drilling performance helped enhance the company's overall visibility and reputation in Saskatchewan



PHOTO COURTESY OF BIRMINGHAM

“This job definitely helped to expand our exposure in Saskatchewan, from the industrial, infrastructure and residential markets to the institutional market.”

- Andrew Weltz, Contracts Manager, Birmingham



The wall was built entirely with a tied back secant pile wall (contiguous caisson wall), and was completed in an organized yet non-linear fashion. Birmingham drilled meticulously so that the existing gallery that lay adjacent to the new property wouldn't become damaged.

Widespread flooding quickly became an issue during the springtime construction to protect the gallery, underscoring the need for the wall. Clifton Associates installed piezometers on the property to thoroughly monitor the water fluctuations. The piezometers were imperative to the project in order to assist Birmingham in making sure the groundwater didn't exceed the necessary levels.

Despite the extreme flooding and the organization required to maintain the water levels, Weltz says the biggest challenge wasn't the flooding; it was the geotechnical difficulties. The Western Canadian Sedimentary Basin crosses right through southern Saskatchewan, littering the soil in boulders and cobbles, thanks to the Canadian Rocky Mountains.

“We overcame it through determination and perseverance,” said Weltz, “And, of course, having the right drilling tools was a big component.”

The mess of heavy stones were annihilated thanks to the Bauer BG36 drill, and a 70-tonne crane-mounted CMV drill fixed on a Kobelco BM700. The prairie geology bowed down to the machinery and the expertise of its operators, including Edward Christensen and Steven Buzzel, who operated the caisson drill rigs, and tieback driller Jaime Watson, site superintendent Frank Saleh and tieback foreman Eric Rivest.

Vertical drilling of 880-millimetre diameter caissons decorated the property. Seventy-nine smaller diameter tiebacks

were included to aid the wall in lateral support. The tiebacks were 150 millimetres in diameter and nine metres in length.

After declaring that the Remai Art Gallery would house the largest Picasso collection in the world, the gallery was immediately thrown into a word-class categorization. There were 405 famous Picasso linocuts donated to the Remai Art Gallery, in hopes that the prairie showcase would draw international acclaim. Having the Birmingham name attached to the project meant an even brighter spotlight on the company and their potential future projects.

“This job definitely helped to expand our exposure in Saskatchewan, from the industrial, infrastructure and residential markets to the institutional market,” said Weltz.

Birmingham is no stranger to large-scale projects. The Sir Adam Beck Power Station Cofferdam was a high-profile North American civil engineering endeavour that Birmingham attached to their belts in 2006, as well as 4.5 kilometres of interlocking pipe pile combi-wall in downtown Toronto. Most recently, Public Works Canada's one-kilometre long loading dock in Sept Isles, Que. was built to accommodate the world's largest ships – Chinamax vessels that carry Quebec's iron ore directly to China.

With the anticipation from a different demographic for the Remai Art Gallery's spring 2016 launch, Birmingham's inclusion in more large-scale artistic projects seems imminent.

Despite the high-profile project's ambitious and challenging schedule, Birmingham completed the caisson wall in three short months.

The Remai Art Gallery is one of numerous projects to assist in Saskatchewan's objective to develop the river and downtown areas in Saskatoon. 🍷



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BUILDING BRIDGES



The Sir Ambrose Shea lift bridge replacement is one of dozens of bridge projects on “The Rock”

By Heather Hudson

To everything there is a season, including bridges.

Many of the province of Newfoundland and Labrador’s 1,134 bridge and culvert structures are at the end of their service life, having aged upwards of 50 years in some cases.

As a result, Newfoundland is in the midst of an infrastructure makeover.

The province’s 2013 budget allotted \$866 million on infrastructure projects, including more than \$32 million on bridge repair, rehabilitation and replacements.

“Not unlike the rest of the country, we face the challenge of aging infrastructure,” said Department of Transportation and Works Minister Nick McGrath. “Through investments such as these, we will ensure that the bridge infrastructure is maintained at an acceptable standard in terms of safety and comfort for the people who use them.”

In the past four years, the province has awarded contracts valued at \$107 million for bridge replacement and rehabilitation projects.

Eighteen bridge repair and replacement projects are being tendered in 2013-14, but none are more extensive than the \$40.6-million contract to replace the Sir Ambrose Shea lift bridge in Placentia, N.F. The project also received \$8 million in federal funding.

The project combines the expertise and labour of designers and pile drivers from across the country.

Designed by engineering, planning, management and technology firm Delcan, the construction was awarded to H.J. O’Connell Construction Ltd., which is completing the project jointly with Vancouver Pile Driving Ltd.

Work began in May 2013 and is expected to be complete in the spring of 2016.

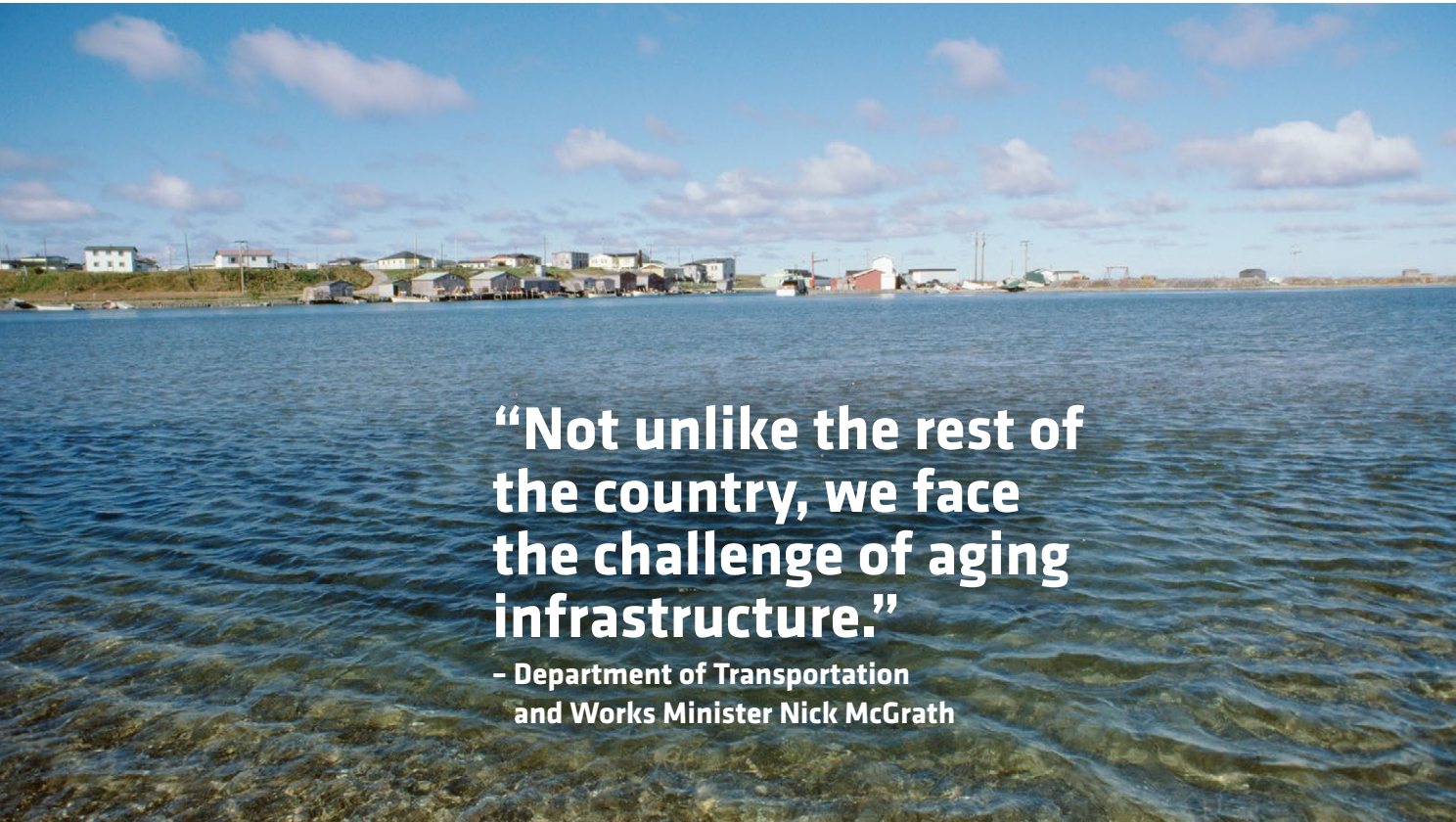
“I grew up in this area and they don’t call it the Rock for nothing. However, on this site, the Department of Transportation and Works drilled down 70 metres and the soil got looser with depth, so driving the piles upwards of 20 to 30 metres worked.”

– Clancy Lannon, Project Manager, Vancouver Pile Ltd.



COURTESY OF H.J. O'CONNELL/VANCOUVER PILE DRIVING LTD.





“Not unlike the rest of the country, we face the challenge of aging infrastructure.”

- Department of Transportation and Works Minister Nick McGrath

PHOTO BY PHOTOS.COM



COURTESY OF CANADIAN CONSULTING ENGINEER

Artist's rendition of the new lift bridge in Placentia, N.F.

A bridge well travelled

The Sir Ambrose Shea lift bridge is the only one of its kind in Newfoundland and Labrador. A well-travelled thoroughfare, it connects the amalgamated town of Placentia, which is comprised of the communities of Placentia, Jerseyside, Freshwater and Dunville. The bridge is raised for vessels approximately 2,500 times a year, mostly to allow commercial fishing vessels to enter the sheltered harbour and dock.

It was built in 1961 to replace a ferry service and had an anticipated 45-year life span. According to Delcan senior structural engineer Jack Ajrab, who worked on the design of the new bridge, the original three-span has held up well, but 50 years of harsh conditions have taken a toll.

“It reached the point where maintaining it would cost as much as replacing it. In the 1950s and '60s, bridges were

designed for a lifespan of 50 years. Today, we design for 75 or 100 years, so we're looking at more durability.”

When designing the replacement, Delcan considered the basic functionality of the bridge. The three-span, steel girder bridge featured two towers, each with a visible machine room that housed all mechanical and electrical equipment at full height. Four counterweights in each of the towers were activated using mechanical components to lift the bridge when the counter weights went down. The basic mechanics and overall look of the new bridge will remain the same.

“The new bridge is functionally similar to the original, in that the centre span lifts vertically. However, the new bridge shape with the four-tower design terminating with tubular member resembles the masts of the fishing boats, which will blend into the local fishing community,” said Ajrab.

The superstructure's tubular design is also expected to be easier to maintain, more durable and, with a good coating, will be impervious to rust for many years.

Construction

Once the design was finalized, crews from a joint venture between H.J. O'Connell Ltd. and Vancouver Pile Driving Ltd. went to work mobilizing the site and demolishing existing boat buildings and houses. Two temporary trestles – one north, one south – were erected to access the centre piers and allow workers to maneuver a 150-ton crane to do the piling, concrete work and install the structural steel.

The piling component is a huge part of the job and, with semidiurnal tides (two highs and two lows at the same height every day) to work around, it's not without its challenges.

“The tide goes out at a rate of up to eight knots, stays slack for about 30 minutes and then comes back at eight knots,” explained Clancy Lannon, project manager for Vancouver Pile Ltd.

“We do certain things on the slack tide, like placing riprap when the tide stops going out and before it comes in. And we stage work, such as sheet pile installation around the tides. When the tide is going out, you work in that direction and vice versa. It’s very challenging, but that’s how marine construction is.”

A bigger – and less anticipated – issue has been high winds. The construction is crane-dependent for virtually everything done on the site.

“We have to boom down if winds are above 70 kph, which has happened quite a few times,” said Lannon. “In fact, this has been one of the worst winters for wind in memory.”

The abutments and piers are founded on pipe piles driven to a depth of about 30 metres. Lannon explains the process:

“Steel sheet pile cofferdams are installed at each location. Pipe piles are driven inside the cofferdam to the design depth. We then place concrete under water using the tremie method. The thickness of the tremied concrete seal varies from 3.9 metres on the South Pier to 6.9 metres on the North Pier. Then the cofferdams are dewatered, pilings are cut off and filled with concrete, the footing is poured and the bridge shafts installed, at which point it’s ready for structural steel.”

In the tender, Delcan offered two design choices when it came to driving piles: a shallow foundation system with massive concrete footing on the ocean floor, which would include excavation and putting piers on competent soils, or driving piles to reach the competent layer and getting supported there.



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COURTESY OF H.J. O'CONNELL-VANDOVER PILE DRIVING JOINT VENTURE

December 4, 2013 – Splicing 12.75-inch pipe piles on the welding bed

Lannon says there was no question that the latter option would be more practical and economically feasible despite the soil that featured less than ideal piling conditions.

“I grew up in this area and they don’t call it the Rock for nothing. However, on this site, the Department of Transportation and Works drilled down 70 metres and the soil got looser with depth, so driving the piles upwards of 20 to 30 metres worked. Pile driving analysis is done on selected piles to make sure they have the capacity to support the design loads.”

Another Delcan design choice concerned the structure: a conventional steel girder design or concrete precast boxes beside girders. Lannon says that one came down to a commercial decision: the steel girder design was considerably cheaper to build.

On task

With a crew of about 15 working on the piling, as of February 2014 the south abutment cofferdam and piles were in place and the south pier and abutment was expected to be complete before spring. The north side construction is under way.

Once the civil work is complete in the spring, the structural steel will be put into place and the mechanical and electrical portions of the bridge will begin. A concrete control house will also be erected for bridge operators to use in daily operations.

“The landscape will look much like it is right now. There will be some scour protection in place around the abutments and the north side will have a steel sheet pile sea wall replacing the wooden crib wall, but otherwise there won’t be much difference. However, I think the new bridge will be more aesthetically pleasing”

Lannon says the new bridge will be complete in 2015 and the old bridge tear down will be finished in 2016.

With multiple other bridge projects happening across the province, one thing is for sure: getting around is going to be a lot smoother in the years ahead. ☺

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STEPPING INTO THE GLOBAL ARENA

By Margaret Anne Fehr



Installation rigs at the Western Alberta Transmission Line



Keller Canada has a presence across Canada, from Ontario to British Columbia



The Highland Valley Copper Mine

Keller Canada rigs at the Western Alberta Transmission Line project

For the piling division of the North American Construction Group (NACG), 2013 proved to be a year of re-invention as the 30-year-old Canadian company became Keller Canada, a division of Keller Group Plc. (KGP), the world's largest ground engineering company, headquartered in London, England.

"In July 2013, the deal was officially sealed as we were acquired by KGP," said Bernie Robert, president of Keller Canada. "As a leader in piling, our team has more than 30 years of experience in a variety of climates and soil conditions across Canada, and we have a full range of piling technologies. Now we are connected internationally, and will continue to be at the forefront of the industry."

Robert foresees a bright future for the newly branded company in the Canadian marketplace and gives insight on how the deal that married NACG-Piling and KGP came together.

"KGP identified Canada about two years ago as a prosperous economy and one that fit their strategic plan in terms of a country that they didn't do a lot of business in, but one where they saw fairly good opportunities," he said. "That's what got them looking and, fortunately, it coincided with NACG marketing their piling division as a carve-out of their company. As it turned out, we met with the KGP folks a year ago in November 2012 and started discussions then."

Regarding corporate structure, KGP operates in worldwide groups on every continent. The KGP-North American group consists of Canada and the United States, which encompasses a number of companies including Hayward-Baker, McKinney Drilling, Case Foundations in Chicago, Suncoast Post Tension, HJ Foundation in Miami, Anderson Drilling and Geo Foundations, while Keller Canada's mandate is to operate exclusively within Canada.

Keller Canada operates out of seven regional offices, including Acheson, Alta. (Edmonton region), Calgary, Alta., Fort McMurray, Alta., New Westminster (B.C. region), Regina, Sask., Martensville (Saskatoon region) and Milton (Toronto region).

"We have a presence from Ontario to British Columbia with the exception of Manitoba, though we do work there periodically, as well," said Robert. "Our commitment to quality is emphasized by our ISO 9001-2008 certified quality management program."

Referring back to the history of NACG-Piling where Robert served as vice president for a number of years, he commented, "The company has grown a lot based on the growth of the oil sands. A good chunk of work has been done in Alberta and we have a very significant presence in the oil sands and mining sectors with an estimate of about 40 to 45 per cent of our work coming from Alberta."

Keller Canada is headquartered in Acheson, Alta., which is situated just outside of Edmonton. The company has 550 employees with field personnel, and 100 corporate and support positions.

One of the ongoing hallmarks of Keller Canada's customer offerings is its commitment to providing the appropriate operational solution or pile type according to the requirements of any given project.



Keller Group Plc. acquired the piling division of North American Construction Group in July 2013

“We look at our services on a broad base and believe that because we have a wide range of experience, we are able to offer the foundation solution that provides the best economics to our client,” said Robert.

“Based on our size and experience, we have the opportunity to use the right people and the right equipment for the demands of the work. Our experience means that we probably have used a certain type of equipment for a different application over the years and have built on that experience. Beyond that, because we can look at different markets, we can build that capital justification based on the likelihood of using equipment in Alberta, or moving it to Saskatchewan or buying it in Ontario, and having the flexibility of mobilizing it back to B.C.”

The Keller Safety Framework

“Though it’s only been six months since the KGP acquisition, Keller Canada has benefited from the Keller Safety Framework initiative, whose corporate mantra is THINK-SAFE. We’ve successfully married that program with what we’ve already accomplished as NACG-Piling in the past,” said Robert.

“Personally speaking, it’s a very important aspect to me. I think we have a moral obligation to make sure that we provide the utmost safety in working conditions for our employees. I come to work every day and expect to go home in one piece, and I believe that everyone else should have that same opportunity. We want to make sure that our people who are working in what are typically more threatening and dangerous environments have the implicit confidence that they are working in a controlled manner that identifies and mitigates hazards.”

Robert points to Keller Canada’s statistics around workers’ compensation reports, refunds and categorization that provides the proof that the company is fulfilling its commitment to employees for providing a safe organization that is cutting-edge and industry leading.

Safety is a paramount issue for Keller Canada, but there are other aspects of the company’s culture that Robert is keen to highlight.

“One of the things we pride ourselves on here is our people. Anyone can go out and buy piling equipment and say they’re a piling company, but it’s the people who bring their expertise and knowledge to the table that really make the difference. We like to think that we cherish and value our people above all else, and we build a lot of programs around making sure they are looked after and that they find intrinsic value in the jobs they perform.”

Keller Canada has also always made a point of reaching out to the community for renewal and to create reciprocal work-related benefits.

“We make sure that we go out of our way to hire co-op students from various universities and trade schools in the markets we work in, and provide them with training opportunities and support to work up in our organization,” said Robert. “We’re embarking on the new co-op and recruiting season now at the universities. It’s important to us and represents an investment in the future. I think we have a very young, vibrant workforce and it’s always being refreshed by bringing these new folks in the doors. They bring new energy and new ideas and are a really positive influence within our company.”

“KGP identified Canada about two years ago as a prosperous economy and one that fit their strategic plan in terms of a country that they didn’t do a lot of business in, but one where they saw fairly good opportunities.”



– Bernie Robert, President, Keller Canada

Staying busy

Business has been brisk for Keller Canada over the last six months, with notable projects including the construction of a major transmission line between Edmonton and Calgary.

“It’s a fairly significant job. As well, we’ve recently been awarded more work in the oil sands and in the potash mines in Saskatchewan,” said Robert.

Other projects include the Fort Hills Load Testing north of Ft. McMurray, Alta. to supply, install and load test-driven steel pipe for facilities on Suncor’s Fort Hills Oil Sands project, representing a \$4.5-million contract; Evergreen Line CPR Special Structures in Port Moody, B.C. and Evergreen Live Pinetree Special Structures in Coquitlam, B.C. to supply and install steel pipe piles to depths of 80 feet to 100 feet for the upcoming Skytrain line, with combined contracts of approximately \$8 million; the 407 Toll Highway expansion in Whitby, Ont. that includes the installation of steel H-pile for 30 new bridges and rock-socketed caissons for 10 other bridges, representing a \$7-million contract and the High Prairie Health Complex in High Prairie, Alta. that includes the design, supply and installation of Continuous Flight Auger (CFA) piles to support three structures that represents a \$4.5-million contract.

Working within KGP, Robert has a strong sense that the international company has confidence in its original decision to acquire the former NACG piling division.

“They obviously did their homework in the years leading up to the deal when they saw that Canada provides a fairly stable economy with a stable political environment and frankly, as the world is developing, we have a very rich and still somewhat undeveloped resource base,” he said. “I think that they see a great opportunity based on those reasons for the long-term and are pleased with the acquisition. If you look at their track record, when they move into a country, they are there for a very long time. This is not a buy-and-flip situation.”

With the logistics of acquisition and the integration from NACG to Keller Canada now in the rearview mirror, the company is getting down to business as usual.

“The bidding season is getting underway right now following the holiday season, so there’s certainly a lot of opportunity on the horizon,” said Robert. “We’ve got our feet squarely underneath us and are operating independently as Keller Canada. We’re really excited about the opportunities.”



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**“We want the industry in
Canada to become one
of the world leaders, not
followers.”**

- Ray Kemppainen, Branch Manager, ECA Canada

DEEP ROOTS

ECA Canada builds on its history to provide specialized foundation equipment

By J. Lynn Fraser

ECA Canada's specialization in foundation construction equipment rentals has deep, dual roots in the North American construction industry. In 1953, the company's Canadian roots took hold when Special Construction Machines Ltd. (SCM) was established. SCM distinguished itself in the industry when it became the first Delmag diesel pile hammer dealer in North America. SCM's product range now includes vibratory hammers, hydraulic drill rigs and tieback anchor/micropile rigs. In late 1999, the company was purchased by Equipment Corporation of America (ECA) and was renamed ECA Canada.

ECA's roots reach back to 1918 when three Chicago-based companies amalgamated. The Chicago Builders Specialty Company, French & Allen and Marsh-Capron manufacturing became ECA, specializing in equipment rentals. Today, ECA's operations are based in Pittsburgh, Philadelphia, Washington, D.C. and Toronto, with sales offices in New Jersey, North Carolina and Indiana.

Marking territory

"ECA Canada's territory for some of its product lines is across Canada, and for others it is from Ontario to the east coast. We represent world leading manufacturers of foundation construction equipment," explained Ray Kempainen,

ECA Canada's branch manager.

The company is a dealer for Bauer, Klemm, RTG, Fambo, MAT, Pileco, Betek, Dawson Construction Plant, HPSI, Berminghammer, WORD Drills International and KB International.

"Previously, the American market had larger 'nationwide' foundation contractors than Canada, while Canada typically has had smaller contractors that concentrated on their local markets, with only a few that worked nationwide. This has changed in Canada recently with purchases of Canadian foundation contractors by worldwide foundation companies," said Kempainen. He offers the example of North American Piling, which was recently purchased by Keller Foundations, a subsidiary of Keller Group Plc.

Recently, both ECA and ECA Canada attained Service Partner status with Bauer Maschinen, specialists in foundation engineering machinery, for all of their branches.

"To reach this status, ECA Canada and the other branches of ECA were each subject to an audit by Bauer Maschinen of their facilities, personnel, safety campaign, service department capabilities, parts inventory, etc. Achieving this status is further proof that ECA Canada and ECA are fully committed to providing their customers with the best service possible," said Kempainen.

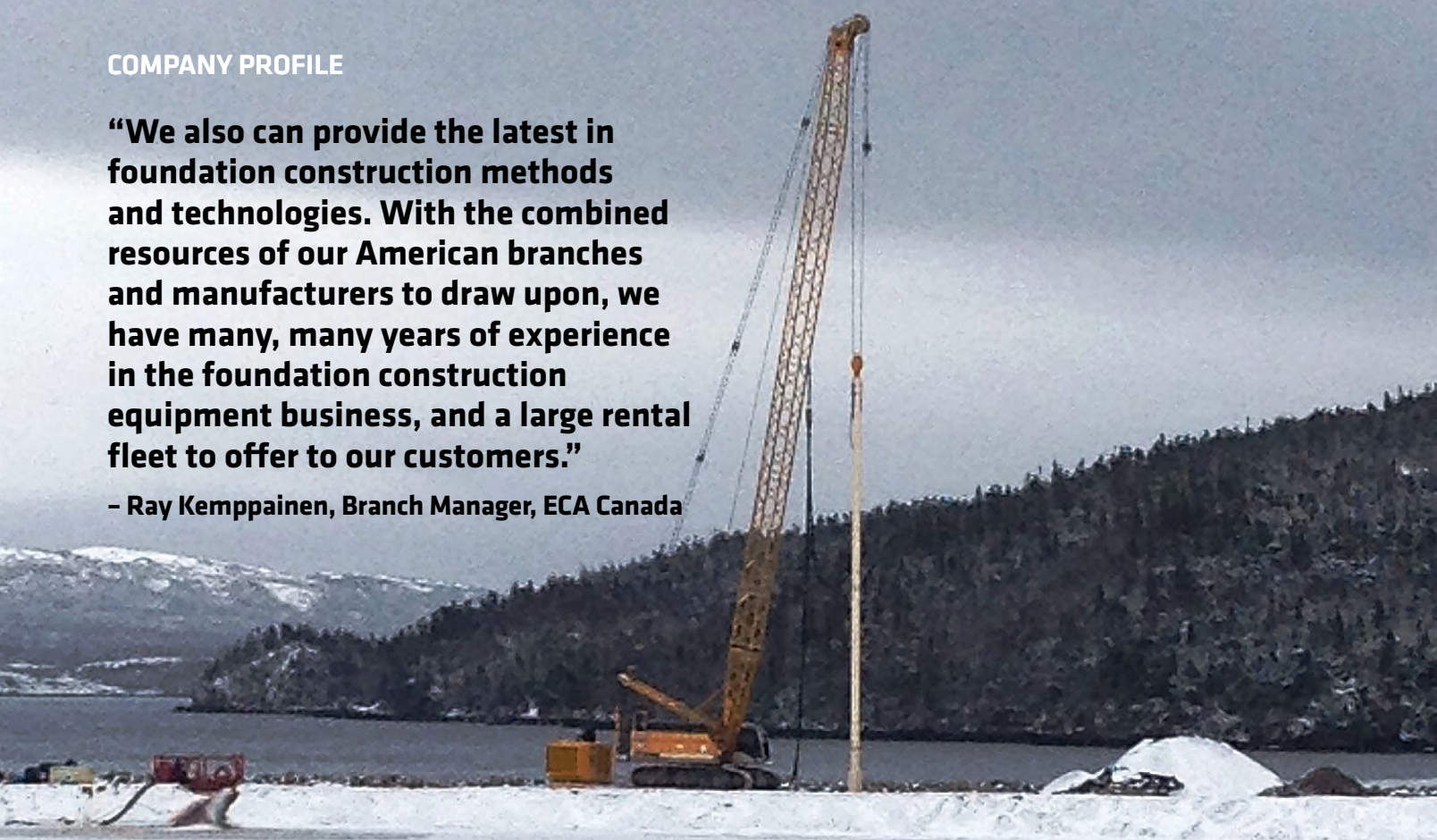


Dawson excavator mounted vibro

COMPANY PROFILE

“We also can provide the latest in foundation construction methods and technologies. With the combined resources of our American branches and manufacturers to draw upon, we have many, many years of experience in the foundation construction equipment business, and a large rental fleet to offer to our customers.”

– Ray Kemppainen, Branch Manager, ECA Canada



ECA Canada provided equipment for the Hebron project in Newfoundland and Labrador

Uplifting experience

New to both ECA and ECA Canada is the introduction of a new line of Bauer Foundation Cranes.

“The first crane, a MC96, has already arrived in the U.S. at our Philadelphia branch with a lift capacity of 130 metric tons. This will open up a whole new market expansion for our company and at the same time, help our customers fill the existing void that currently exists in the heavy duty foundation crane market,” said Ben Dutton, ECA Canada’s executive vice president of sales and marketing. “Providing customer solutions is a primary focus of our mission and goals, and adding cranes to our repertoire helps us meet this challenge.”

Deep thinkers

“ECA and ECA Canada benefit from Bauer’s world-wide experience,” noted Kemppainen.

Bauer, based in Germany, is an engineering innovator. Their combined cutter and soil mixer saves both time and money. Their innovation also extends to areas such as underwater drilling. In 2011, Bauer Renewables Ltd. and Bauer Spezialtiefbau GmbH, the parent company, were part of a project to install monopile foundations for a tidal turbine off the coast of Scotland. Kemppainen notes that ECA and ECA Canada also benefit from their relationship with companies like Bauer and Klemm due to their global network of suppliers.



Driving piles in Fort McMurray, Alta.



A Bauer BG 25 H working in Toronto

Home sweet home

ECA Canada is now putting down roots in Uxbridge, a township 40 kilometres (25 miles) northeast of the City of Toronto. The company’s new facilities opened for business on Dec. 17, 2013. Their former location was based in the northern end of Toronto, where the company set up shop in 1958. Over time, the neighbourhood changed from an industry-friendly space into a retail and commercial environment.

“The logistics of getting large equipment to/from and in/out of our yard was becoming increasingly difficult. The facility itself couldn’t support the work we perform on the large drills; we were working outside in the yard most of the time,” said Kemppainen.

While ECA Canada’s home has moved, its heart is still in the company’s employees. Roy Kern, president of ECA Canada, has a long association with the company. His grandfather worked for ECA in the 1920s and later acquired controlling interest in the company. ECA Canada currently has a staff of 14 that handle sales, administration, service and parts.

Built by Pioneer One Steel Buildings and Rockwood General Contractors Ltd., the new 12,000-square foot (1,114.8 square metres) facility has a 2,000-square foot (185.81 square metres) space dedicated for parts as well as a heavy-duty floor built for extreme weight.

“Our new location in Uxbridge Township was chosen because it is in an existing industrial park and the logistics of moving the equipment is much better,” explained Kemppainen. “We now have four acres of room to store equipment, tooling, casing and related accessories. Our workshop can accommodate working on the large equipment inside, complete with a new 25-ton overhead crane.”



Being located in Uxbridge also means that employee commute times are shorter.

“Our employees no longer have to deal with the stress of Toronto’s infamous traffic, and that has been very beneficial to [us all]!” added Kemppainen.

ECA Canada’s new facility will enhance the company’s ability to provide its diverse services, such as rentals, sales, service, parts, tooling and supplies for their line of heavy foundation construction equipment.



The new building and location allows ECA Canada to better service their customers



ECA's new Bauer MC 96 foundation crane, which was rigged up for the first time at the beginning of February 2014 in the yard of ECA Canada's sister branch, ECA Philadelphia. The addition of cranes to ECA's repertoire will expand a whole new market to the company and allow even better service and solutions to their customers.

"[The range of products includes] everything from equipment for drilled piles, driven piles, vibrated piles, displacement piles, CFA piles, tie-back anchors, micropiles, high pressure grouting, foundation cranes, hydraulic grabs, cutters, soil mixers and cutter soil mixers," Kempainen said. "We also can provide the latest in foundation construction methods and technologies. With the combined resources of our American branches and manufacturers to draw upon, we have many, many years of experience in the foundation construction equipment business, and a large rental fleet to offer to our customers."

Building momentum

The Canadian market, according to Kempainen, "was strong in 2011 and 2012. They were record years for ECA Canada. [In contrast,] 2013 was a little slower but still steady. With some major projects still on the go or on the horizon, such as the

TTC Eglinton LRT, the proposed TTC Scarborough subway expansion, some major work required in Montreal and continuing work in Western Canada, we're looking forward to another great year in 2014 and beyond. Our Canadian foundation contractors are also starting to embrace the newer foundation methods and technologies that we can provide, thereby expanding their repertoire."

Not resting on any laurels, ECA Canada is looking to add more feathers in their cap with plans for the future.

"Markets we are looking at in the future include developing new foundation construction methods and technologies and introducing them to the market in Canada," said Kempainen. "Bauer, for example, is foremost in developing these new methods and equipment to perform these new methods. While the tried and true methods are still widely used in Canada and work well, some of the new processes can save our customers time and money and still achieve a better product in the end. We want the industry in Canada to become one of the world leaders, not followers." ☺



At the ADSC show in Orlando in 2007

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ROLLING IN THE DEEP

The Roll Form Group continues its success in North America

By Jim Chliboyko

There probably aren't too many things that Nisku, Alta. and Iuka, Miss. have in common, but the Roll Form Group is one of them.

The two towns – Nisku, which is just south of Edmonton, and Iuka in the northeastern-most county in Mississippi – are part of the landscape of the Roll Form Group, which itself is actually part of the vast Samuel, Son & Co., Limited, a privately held Canadian company that has been involved in the steel business since 1855.

Hal Mulveney is the general manager of the Roll Form Group's Heavy Construction division, and describes the company as consisting of four different businesses.

"There's Heavy Construction, Transportation, Building Products (Joists) and then we have a catch-all category that we call Custom Forming, serving the general manufacturing, solar, barge and truck markets," said Mulveney. In terms of Heavy Construction and piling, that specific division of the Roll Form Group produces "cold rolled sheet piling and sells or distributes hot rolled sheet piling, H-pile, pipe pile, hot rolled structurals, pile points and tie rods," according to company literature.

They also produce some products that many Canadians see every day of their lives.

"In Canada, we also manufacture highway guardrail products," said Mulveney. "The highest percentage of sales [for these products] are in Ontario and Quebec, followed by the West and then the Maritimes. We are a national distributor of our products across the country."

At one point in time, the Roll Form Group was known as Canadian Metal Rolling Mills, or CMRM. Mulveney said the name changed when they began to expand into the United States. CMRM began in September 1967 rolling roof deck, says Roll Form Group's John Mitchell. Currently, the company has just over 550 employees, with 320 in the United States and about 240 in Canada.

The Roll Form Group's Ontario facilities are located in Cambridge and Mississauga, Ont. Their Cambridge facility is devoted to heavy gauge products such as sheet piling, structural sections and guiderails through two plants with combined production area of over 170,000 square feet, especially focused on Heavy Construction and Transportation products. This plant can also do some finer detail work, like piercing, punching and sweeping, painting and can also deal with varieties of both ferrous and non-ferrous metals. The Mississauga location has been focused mostly on light gauge building products (deck and cladding), though the company has made the decision to exit this business.

The Nisku facility actually operates under the name Omega Joists and is focused on open web steel joists, while the Iuka plant in Mississippi is a 130,000-square-foot manufacturing plant, serving Roll Form Group's Heavy Construction and Transportation customers in U.S. and Mexico, in particular.

According to the Roll Form Group itself, combined, the company's manufacturing facilities are incorporated in over 400,000 square feet of production floor space with production lines including cold forming mills, in line notching, piercing and punching. In addition, separate fabricating bays include shearing, brake forming, MIG and TIG welding, plasma cutting, precision drilling, assembly and painting.

Though the company is looking to increase its activities in other regions in North America, Ontario is obviously a big area for the Roll Form Group.

"In Canada, the greatest focus on sheet piling is around the Great Lakes and St. Lawrence. Specifically marine, everything from small craft harbours to major shipping wharves," said Mitchell, the Ontario-based Canadian sales manager who has been with the Roll Form Group for 26 years.

One of the company's larger projects recently has been the Windsor-Essex Parkway Project, also known as the Right Honourable Herb Grey Parkway (a name just given to the



City of Toronto Leslie Street Connector Project

project this past fall), a \$1.4-billion, 11-kilometer-long highway which will basically connect Highway 401 near Windsor with the American border at Detroit.

“We had an order for all the H-piles on this project, some 18,000 tonnes of steel,” said Mitchell. Their contribution to the project began in May 2012, and wrapped up in 2013. “As far as the H-piles, that’s the biggest project we’ve ever been involved in.”

One of the companies that the Roll Form Group often finds itself working with is the Hamilton-based Birmingham Foundation Solutions; the two companies have recently worked together on wind farms, the aforementioned Windsor-Essex Parkway Project and on the Leslie Street Connector, amongst other projects.

“We feel we’re very lucky to have a good quality piling supplier,” said Peter Smith of Birmingham, referring to the Roll Form Group. “They’ve been a steady and reliable supplier to us for decades. They’re certainly excellent at responding to our needs ... They’re great about getting back to us.”

Heading into any given project, said Smith, “sometimes we don’t know the soil conditions and that’s where a great supplier shows their worth.”

Amongst some of the other projects the Roll Form Group has been involved in is the Wainfleet Wind Farm, which they just completed with Rankin Construction, says Mitchell. They are also working on the BioAmber acid plant project in Sarnia with Deep Foundations Contractors, as well as doing work with Anchor Shoring & Caissons on the Ashbridges Bay Wastewater Treatment Plant, Toronto’s main treatment plant and the largest in treatment plant in Canada.

In spite of the presence of projects like the Windsor-Essex Parkway, Mitchell sees a particular direction for the business, in the short term, anyway.

“The direction seems that there’s a lot of stimulus in medium-sized projects,” said Mitchell.

Another one of the directions that the Roll Form Group seems to be heading in is south. The company has been known to buy firms in the U.S., like I.C.S., a national distributor of piling products and a former customer of the Roll Form Group, which they purchased in 2007. In 2009, the Roll Form Group purchased Jacksonville’s Piling Products Incorporated (PPI), which allowed the company to get into different areas of the industry, like the rental piling business, which is a segment of the market that thrives in the U.S. In 2012, the company also purchased a railcar component manufacturer called Stanrail in Gary, Ind.

“Rental piling is used in many applications, and it can be in the ground for a month, six months or longer,” said Mulveney. “We probably have 15,000 tonnes of various sizes and lengths of sheet piling in our rental fleet. We really grew that part of business with this acquisition.

“Rental piling is a bigger part of our business in the U.S. than Canada due to the different soil conditions. In certain areas of the U.S., the piling can be driven in and pulled out of the ground a number of times. In Canada, larger companies have their own fleet, with sheets that they’ll use for temporary applications.”

Not to be overlooked in all of this is the Roll Form Group’s construction of the Iuka, Miss. plant. This green-field facility started production back in 2007, and was chosen for its strategic location, says Mulveney, with

COMPANY PROFILE



BoiAmber Project in Sarnia

southern steel mills close by, as well as good road, rail and river connections.

“Sixty to 70 miles straight east is Decatur, Ala. It’s a steel centre. There are many steel mills in the south, within good

proximity of the plant,” said Mulveney. “Our products do ship fairly well. As an example, we can ship product from Mississippi to Fort McMurray and be competitive.”

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The prospect of doing business in Mexico also figured in the location of their Iuka plant.

"[For our Mexican customers,] we can load rail cars at our plant in Mississippi, then rail to Texas, where our Mexican partners will pick up our products and be the importers of record into Mexico," said Mulveney.

Another benefit of the Iuka location was that the plant was purpose-built new for the company, with the potential for them to easily double their manufacturing footprint, if needed.

"It is a pretty significant investment," said Mulveney. "But what you end up with is an efficient facility with good process and material flow and that is exactly what you want. As we have purchased companies in the past, and as we have moved equipment from facility to facility, you don't have the luxury of flow [in older, pre-owned facilities] as you do in a newer facility."

Along with their ambitions for growth, membership in industry associations is important to the Roll Form Group management. The company is involved in no less than 20 different associations, including the Deep Foundations Institute (DFI) and the Pile Driving Contractors Association (PDCA).

"Certainly, within the heavy construction world, there are important associations," said Mulveney. "The DFI is important, we are very supportive of that association, and we regularly attend their events. We are members and supporters of PDCA as well. Being a member of these industry associations allows us visibility throughout the organization, throughout the membership and across the industry as a whole. It could lead to new customers, new contacts in the engineering community, hopefully leading to future opportunities and collaborations. From time to time, there could be important information forthcoming from these associations, whether it's government regulations and specifications, that sort of thing."

For the future, the Roll Form Group isn't just limiting their plans to expanding further across the United States.

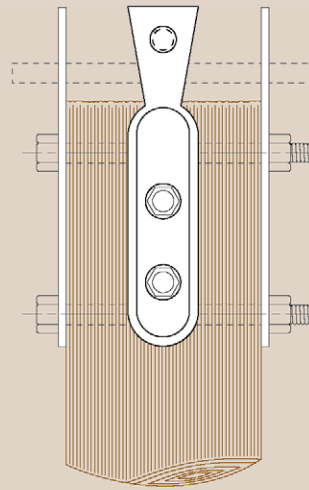
"Between five and 10 per cent sales of our sales are in Mexico, with 60 per cent in the U.S.," said Mulveney. "For future growth (domestically), we do need to grow in both Western and Eastern Canada. Concurrently, our plan is to also grow in the U.S. and Mexico with stronger coverage, new products and through acquisition."

When asked what made the Roll Form Group the company it is today, Mulveney lists off several factors: "We focus on being a low-cost supplier, providing the highest level of service and integrity, supplying the industry with a wide range of products, delivered on-time, anywhere in North America. To do so, we have to carefully manage inventory, production, freight and logistics. We have a pretty well developed logistics solution. We deliver the material when the customers need it. You need to be a reliable supplier."

There's one guiding principle the company tries to keep in mind during all of its activities.

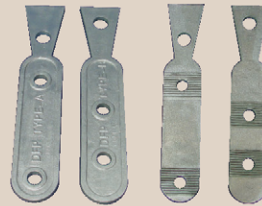
"At the end of the day," said Mulveney, "We just try to help our customers by keeping their total costs as low as possible." ☺

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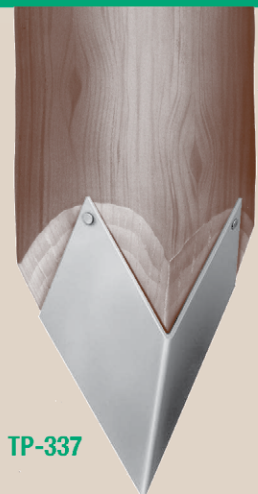
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TOUGH PERFORMER

Burnaby-based Traxxon Rock Drills has earned an excellent reputation for building tough and innovative equipment, and for selling and supporting quality products from other manufacturers

By Kelly Gray

When you build and support equipment for use in the wilds of British Columbia, you make it strong and you build in innovation and performance. This is what the founder of Traxxon, Mike Horvat, did in the early 1960s. Today, Traxxon has carried on this tradition with a full line of drilling equipment, components and accessories that are among the best in the industry.

The early days saw the company solely focused on the coastal forest industry. This is when they converted WW2 Sherman army tanks into mobile drilling equipment called tank drills, allowing mobility in the rugged coastal mountain terrain. It's also where they came up with their innovative 360-degree positioner allowing drilling at virtually any angle.

The tradition of building rugged and innovative equipment for Traxxon's expanding customer base carried on with Steve Cross taking over the business from Horvat in the 90s. Cross, who had started working with Horvat early in his career, was able to take the company to the next level of innovation with



Sandvik Ranger 800 RPs and Traxxon TR-EX 2000 on Vancouver Olympics Highway Upgrade Project



Traxxon TR-EX 2000 installing 20-foot long casings on an angle

PHOTOS COURTESY OF TRAXXON

“Our customers can call our mechanics directly when they’re broken down, or call our parts team after hours to get something shipped out when time is critical. We cut out the red tape and bureaucracy, so that it’s easy for our customers to get the support they need.”

– Shaun Norman, Traxxon Rock Drills

his team, designing an excavator mounted drill attachment – the TR-EX. Highly successful in Western Canada, the TR-EX has proven itself in both forestry and construction, and it has also been sold to customers around the world.

Traxxon’s culture of innovation soon attracted the attention of the industry, and Cross sold the business to a larger long-term company. His idea was to obtain the assistance of a larger company to help Traxxon grow. Indeed, the acquisition was one that fostered growth, and today he continues to play a key role in product design, support and leadership under this new corporate umbrella.

Second to none service

With innovation as a foundation, Traxxon management took it further with an understanding that great products need to team with the kind of solid support that keeps equipment and job sites running. To make this happen, the company built a cohort of experienced and knowledgeable personnel that are available to help its customers when they need it most.

“Our customers can call our mechanics directly when they’re broken down, or call our parts team after hours to get

something shipped out when time is critical. We cut out the red tape and bureaucracy, so that it’s easy for our customers to get the support they need,” said Traxxon’s Shaun Norman, who reports they offer the services of a well-trained team of Red Seal ticketed journeymen heavy-duty mechanics, several with multiple tickets. In fact, Traxxon’s lead mechanic has been with the company for 20 years and helps to pass along the culture of customer service and support to the newer members of the team.

To keep them top of the class, Traxxon regularly sends their mechanics for factory training, mostly in Europe. While this is an expensive practice, it pays dividends for their customers. Not only are their mechanics experienced but, with the extra advantage of factory training, it makes them even more proficient to get equipment fixed properly and up and running quickly.

Traxxon’s support team uses several fully equipped service trucks and offers a large fully equipped service facility along with a fabrication shop, manufacturing and design department. Traxxon also has a well stocked parts department with a parts team capable of getting critical items out to the



Traxxon T-800H Tank Drill

customer in the most remote location on a moment's notice. Traxxon's sales team also plays the important role of liaison between the customer and Traxxon, making sure customers' needs are being met.

Industry leading equipment and support

In recent years, Traxxon has expanded its product line to better support its customers' needs, and to introduce its product support to new customers. Traxxon still does a lot of business with the forest industry, but over the last decade has become more involved with the construction sector.

For example, Traxxon has been a dealer for Sandvik construction drills for the past 20 years and has been very successful in Western Canada representing this equipment. Traxxon realized from the outset that offering a high quality, high performance product like Sandvik, backed up with top quality product support, was a winning combination that their customers are looking for.

"Our customers are asking us to work on their other drilling equipment too," said Norman. "That's when we realized there is a demand for high quality drilling equipment for different applications in the construction industry, with the same quality product support we are already offering."

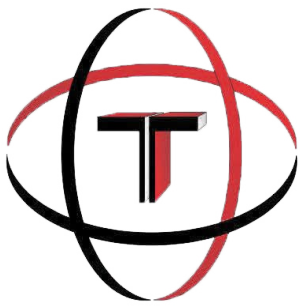
In this vein, Traxxon started representing ABI Group's Interoc line of drills for Canada in the fall of 2010. ABI Group is a German manufacturer of high quality and innovative drilling and piling equipment, which fits Traxxon's business model. ABI Group has four product lines including the ABI, Delmag, Banut and Interoc. Traxxon will be offering a complete selection of all lines starting in 2014 for the Western Canadian market.

Traxxon will also be the Western Canada dealer for Comacchio Industries out of Italy. Another company that manufactures a very diverse line of high quality drilling equipment with lots of innovation, Comacchio will complement the ABI Group product line, giving Traxxon customers a further advantage when it comes to selection and capability.

To make sure that the customers get the support they need, Traxxon is now teaming up with Hammer & Steel out of the U.S., who themselves are already successful dealers for both ABI Group and Comacchio Industries. Hammer & Steel has seven locations in the U.S., with a large support team and inventory, which has helped make them successful. The working relationship between the two companies will allow Traxxon to provide excellent support to their customers in Western Canada.

Pinnacle Drilling Products, a supplier and manufacturer of tooling and accessories, will be working with Traxxon and Hammer & Steel to market the equipment and provide the customer with a one-stop shop for both equipment and tooling. Pinnacle has two locations, one near Traxxon in Burnaby (Vancouver) and the other in Calgary where they also do manufacturing. Pinnacle has a reputation for being the company to go to when tooling solutions are needed, and because of this the company has grown significantly in the last five years.

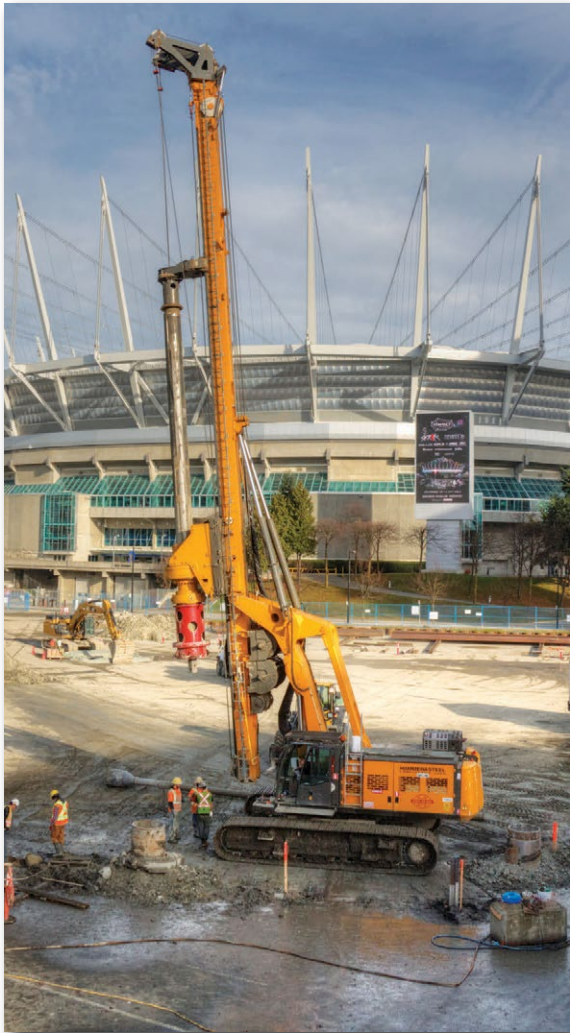
Traxxon's future looks bright with an experienced team, quality products, successful partners and a commitment to looking after their customers. They also have senior management and ownership that are dedicated to providing the resources and leadership to keep Traxxon a long-term equipment supplier in the drilling business, and to allow it to grow in the future to meet their customers needs. ☺



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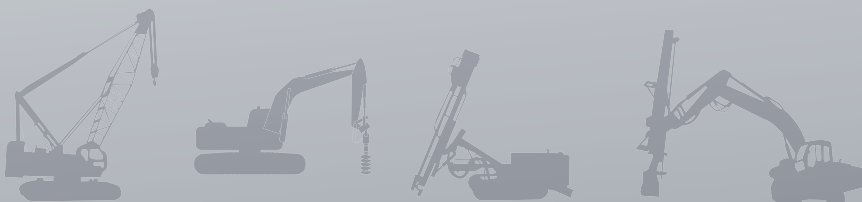
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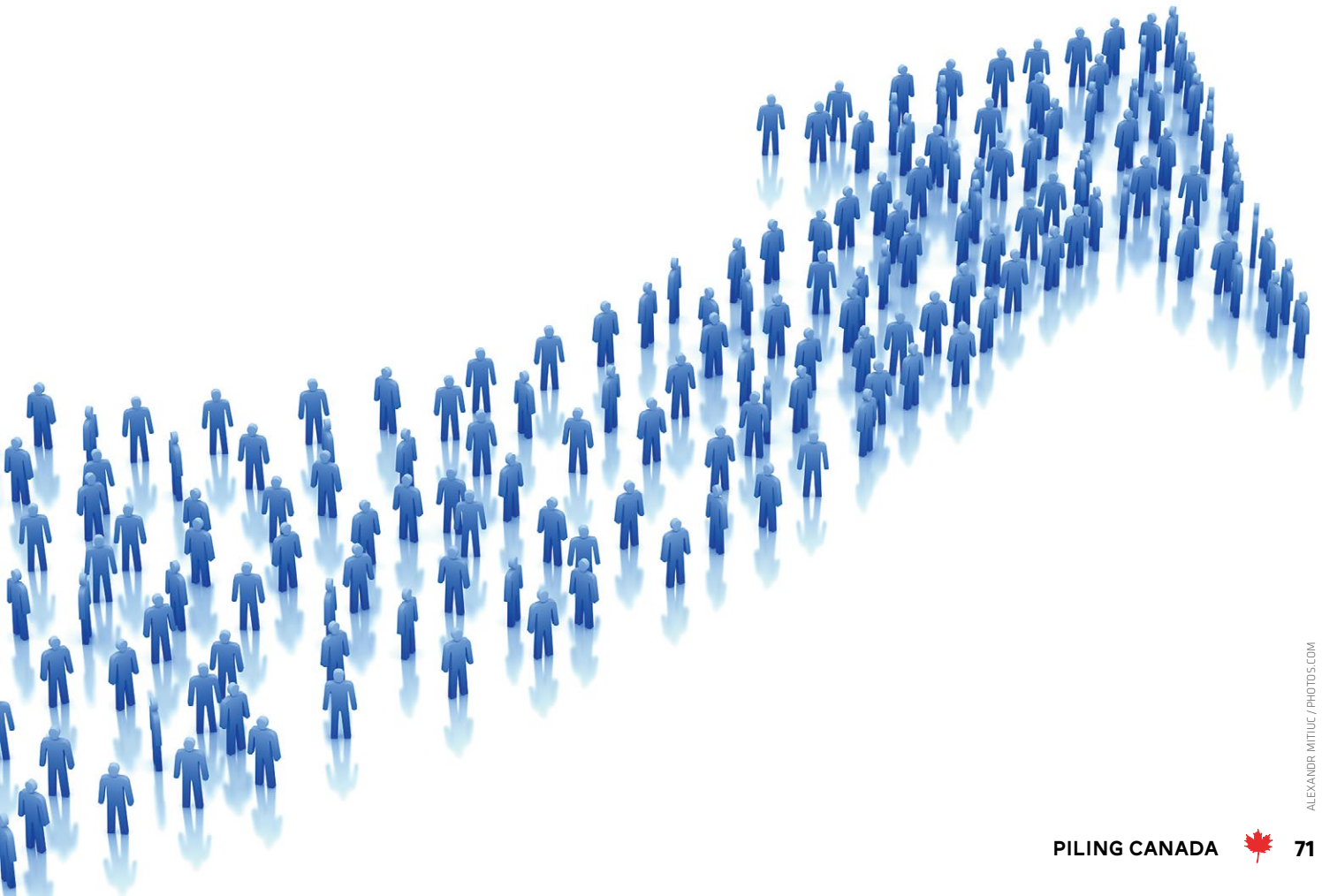
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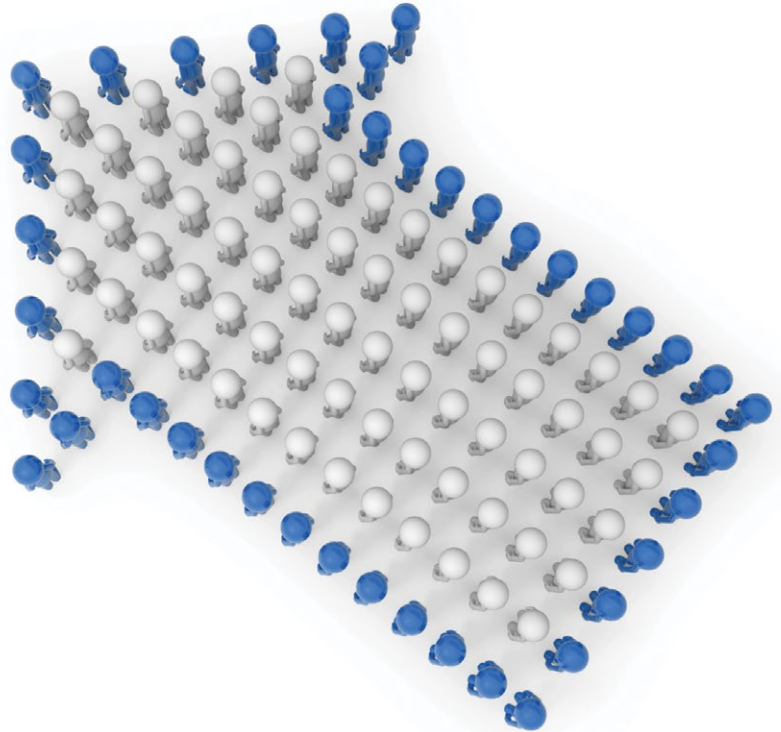
By Barbara Bowes, Legacy Bowes Group

Six years ago, the results of a national leadership survey revealed five top looming workforce challenges for any and all industry sectors. The top five challenges included the attraction and retention of skilled professionals, developing manager capability, retaining high performers, developing succession pool depth and addressing management and leadership talent.

So, where does the construction industry stand? The answer: in a very tough place! That's according to forecasts developed by BuildForce Canada, a national industry-led organization committed to providing accurate and timely labour market data and analysis. Their research is showing that the construction industry is currently and will continue experiencing a significant shortfall of skilled construction tradespeople over the next decade.



A candidate can have all the skills in the world, but if they don't fit into your organization's culture, they will simply not stay for the long term.



I'm quite certain that corporate leaders have been fully aware of this shortfall for some time, yet are challenged as to what role they can play in turning around an entire industry sector. My advice is to voice your concern to government and educators while at the same time focusing on ensuring your company is the best of the best in your business.

Being the best of the best means that your company has excellent human resources systems and that you practice what you preach to your customers and market through your websites. If your branding slogans boast of such things as superior resources, personal service, a collaborative approach and/or fostering innovative solutions, then I guarantee you can't accomplish this without good human resources practices.

Heavy impact

Human resources practices touch every aspect of your business and create a "domino" effect. In other words, if one part of the system is ineffective, it'll impact all other parts of the system. This can result in misalignment with company vision, poor morale, high turnover, interdepartmental conflict and low productivity, all of which will ultimately hit your bottom line profitability.

In simple terms, good human resources management means hiring the right people at the right time with the right skills and doing the right things within a strong supportive environment. While there are many complexities within human resources management systems, I personally believe that a focus on the two key strategies of a) recruitment and selection and b) a focus on training and development will

help to steer any company in the right direction. Let's examine the elements of each strategy.

Define your organizational culture

A candidate can have all the skills in the world, but if they don't fit into your organization's culture, they will simply not stay for the long term. At the same time, candidates that do fit are known to reduce turnover statistics by 30 per cent. In fact, in my experience, most candidates who do not fit exit within one year, often leaving a trail of distrust and hidden costs behind them. Believe me, culture always wins! So, take time to define the key values within your culture and incorporate these into your candidate assessment process. Create specific behavioural questions that identify and confirm the right experiences and values for your company in order to ensure the right fit.

Build a competency map

Leaders need to know the skills, competencies and work behaviours that are required in every job and every level throughout the organization. Creating a competency map allows leaders as well as individuals to visually see the skills required and provides a framework for recruitment and selection as well as for employee development and succession planning. The map creates opportunities for leaders to see the organization as a whole and enables them to create a workforce and employee development plan that builds in contingencies to overcome any surprise employee turnovers, skill shortages and gaps as well as succession issues.

Focus on in-house technical training

Most of *Piling Canada's* readers work on highly complex, unique engineering structures that require significant project management and leadership skills. For instance, one of the most high profile and complex projects ever attempted was the righting of the Costa Concordia cruise liner that capsized on the coast of Tuscany. This project involved over 500 people from multiple professions and 26 countries, working 24 hours per day, seven days per week.

While not every construction project is as complex as the Costa Concordia, every construction project has its own unique character and requires creative and innovative project leaders in order to assure a successful outcome. So where do these skills come from? In most cases – and the best approach, in my view – is to develop skills through extensive exposure to a wide range of progressively complex projects. This on-the-job experience, accompanied by solid in-house technical training programs, shapes and develops skilled technicians who understand your systems, your culture and practice your values toward quality, safety and customer service.

Focus on leadership

Since construction projects are so task-driven, technical training is definitely one key to corporate success; however, the other critical element for ongoing success is that of leadership training. And according to recent research, any future training must force leaders to undergo a complete “paradigm

shift away from short-term thinking to a more integrated approach. More importantly, leaders need to develop their skills in demonstrating empathy and compassion and the ability to develop positive interpersonal relationships and social responsibility so that they can excel in a more collaborative and integrated approach now being demanded throughout the industry.

Time is of the essence in the construction industry, and therefore leadership programs offered over a period of approximately six months are highly valuable. This progressive type of training allows individuals to get out into the field and practice what they've learned and to be coached and mentored, not only by classroom instructors but also by leaders on the construction sites. Your programs must also focus on helping leaders develop the emotional intelligence, teamwork, collaboration and social responsibility styles that are needed going forward.

Project-driven organizations, such as those in the construction industry, have long had the reputation of placing less priority on human resources management as compared to time, cost and quality goals. However, this approach is outdated and will no longer enable members to respond to complex future demands. If your goal is to be the best of the best, then focus your attention on creating an effective human resources management system. This will ensure the attraction and retention of skilled professionals and high performers while building strong technical strengths and leadership capacity. ☺



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BUILDER'S RISK INSURANCE

A financial safeguard for builders



By Dean G. Giles, Fillmore Riley LLP

Many construction projects proceed without incident. Unfortunately, experience shows that damage can occur during construction, leading to significant repair or replacement costs. Builder's risk insurance is specifically designed to indemnify against property loss to buildings and structures while they are under construction.

In the leading case of *Commonwealth Construction Company v. Imperial Oil Limited*, the Supreme Court of Canada described the function of builder's risk insurance (also known as course of construction insurance) as follows:

Whatever its label, its function is to provide to the owner the promise that the contractors will have the funds to rebuild in case of loss and to the contractors the protection against the crippling cost of starting afresh in such an event, the whole without resort to litigation in case of negligence by anyone connected with the construction, a risk accepted by the insurers at the outset.

The parties generally insured under a builder's risk policy are the owner, the general contractor and all sub-contractors. The policy term runs from the beginning of construction through to completion of the project, which often is tied to occupancy of the building or structure in question.

When a loss does occur, the first question to be addressed is whether the damage falls within the scope of coverage afforded by the insuring agreement in the policy. In this regard, it is important to note that the risk typically insured under a builder's risk policy is direct physical loss or damage to property in the course of construction. This means that existing buildings and structures, property not located on site and the contractor's tools and equipment normally are not included within coverage.

R i N S U R A N C E K



Risks that are typically excluded from coverage in a builder's risk policy include faulty design, material or workmanship, latent defect, inherent vice and wear and tear.

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While policy wordings will often vary, most builder's risk policies are written on an "all risks" basis, the result of which is to provide very broad coverage narrowed only by the exclusions in the policy. In the case of an all-risks policy, the party looking for coverage need only show that the loss in question was fortuitous, meaning accidental, unintentional or unexpected. It is not necessary to prove the exact nature or cause of the loss. Less frequently, coverage will be provided on a "named perils" basis, meaning that the damage must be caused by one of the specific perils set out in the policy. Named perils coverage obviously is much less expansive than that afforded in an all-risks policy.

Once it is determined that a loss falls within the insuring agreement in the policy, the next step is to determine whether any exclusions apply. It is a general principle of insurance law that exclusion clauses in a policy are to be narrowly construed. Risks that are typically excluded from coverage in a builder's risk policy include faulty design, material or workmanship, latent defect, inherent vice and wear and tear. While a detailed analysis of these exclusions is beyond the scope of this article, a few general comments can be made.

The purpose of the exclusion relating to faulty material or workmanship is to remove from coverage the insured's liability to repair or replace its defective or deficient work product. In the absence of this exclusion, the policy would be transformed into a performance bond or guarantee of the policyholder's contractual performance. In addition, Canadian courts have consistently held that the term "faulty"

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is not limited to negligence but is broader and more encompassing. In other words, the exclusions might apply even when there has been no negligence on the part of the insured.

With respect to the exclusion for design flaws, the Supreme Court of Canada has held that a design is not “faulty or improper simply because it does not meet a standard of perfection in relation to all foreseeable risks.” In other words, the exclusion will not apply where it can be shown that the design in question met the foreseeable risks with the diligence and expertise that at the time were state of the art.

It is important to note that provisions excluding coverage for faulty or improper workmanship generally do not apply to “resultant damage” to the property. In this regard, the typical builder’s risk policy defines “resultant damage” as damage

When a loss does occur, the first question to be addressed is whether the damage falls within the scope of coverage afforded by the insuring agreement in the policy. In this regard, it is important to note that the risk typically insured under a builder’s risk policy is direct physical loss or damage to property in the course of construction.



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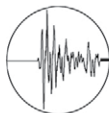
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to some part of the insured property other than the part of the property that was faultily designed. In practical terms, this means that costs associated with repairing the defective property itself are excluded, while losses resulting from the defect or deficiency are brought back within coverage.

From a practical standpoint, it is often difficult to separate the part of the work that was the subject of faulty or improper material or workmanship from the rest of the work. Canadian courts have generally taken the view that, where an insured party undertakes work or supplied product that consists of several components, the exclusion dealing with faulty or improper materials, workmanship or design extends to the whole of the work or the entire project and the “resultant damage” exception does not apply.

Builder’s risk insurance is an effective means of safeguarding the financial interests of parties involved in construction. That said, these policies do not cover all property and every risk. In each case, interested parties are cautioned to carefully review the policy in question to determine the nature and extent of coverage available. ☺

Dean Giles is a partner with Fillmore Riley LLP who practises primarily in the areas of general civil and commercial litigation and insurance law. You may contact him at deangiles@fillmoreriley.com.

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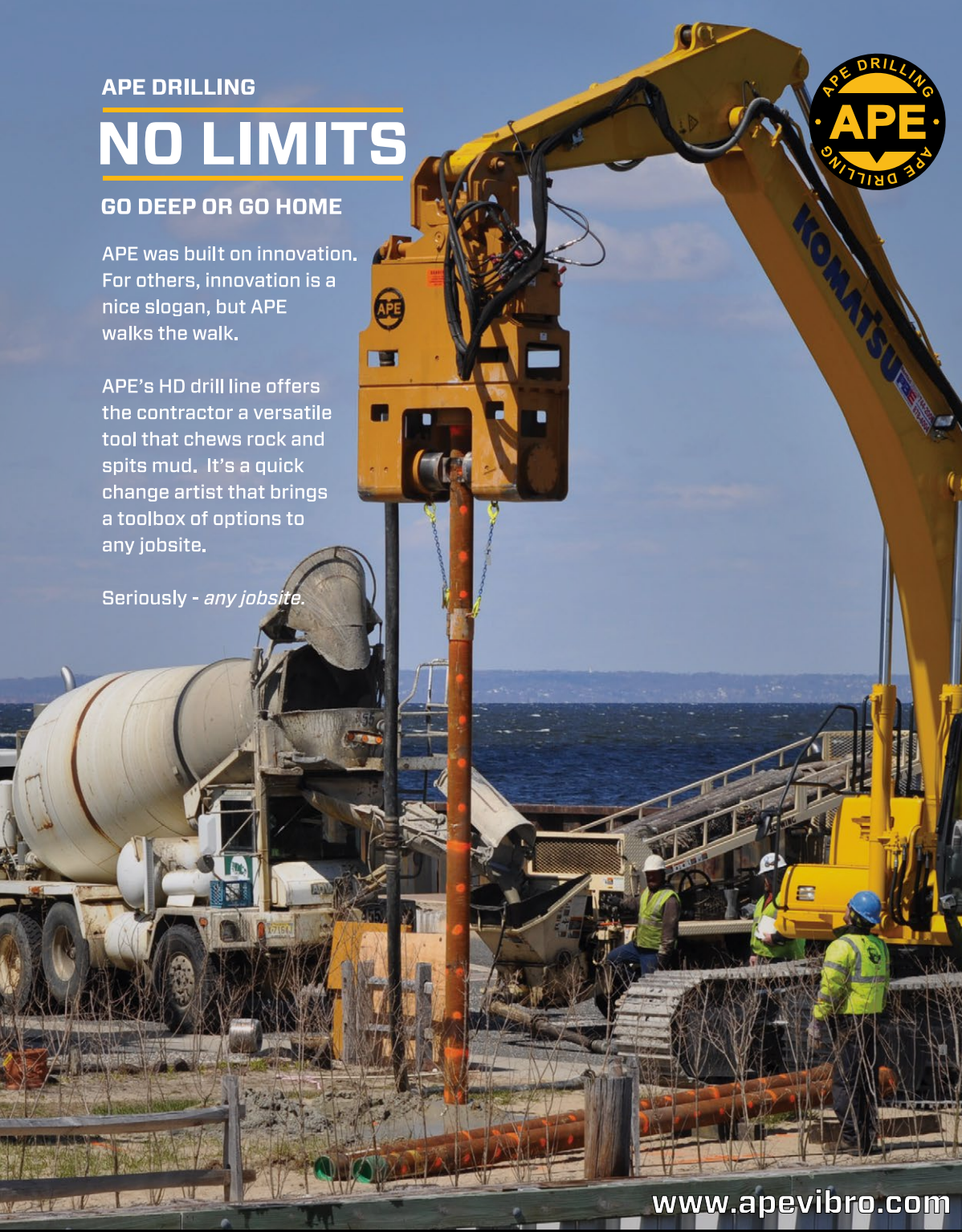
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