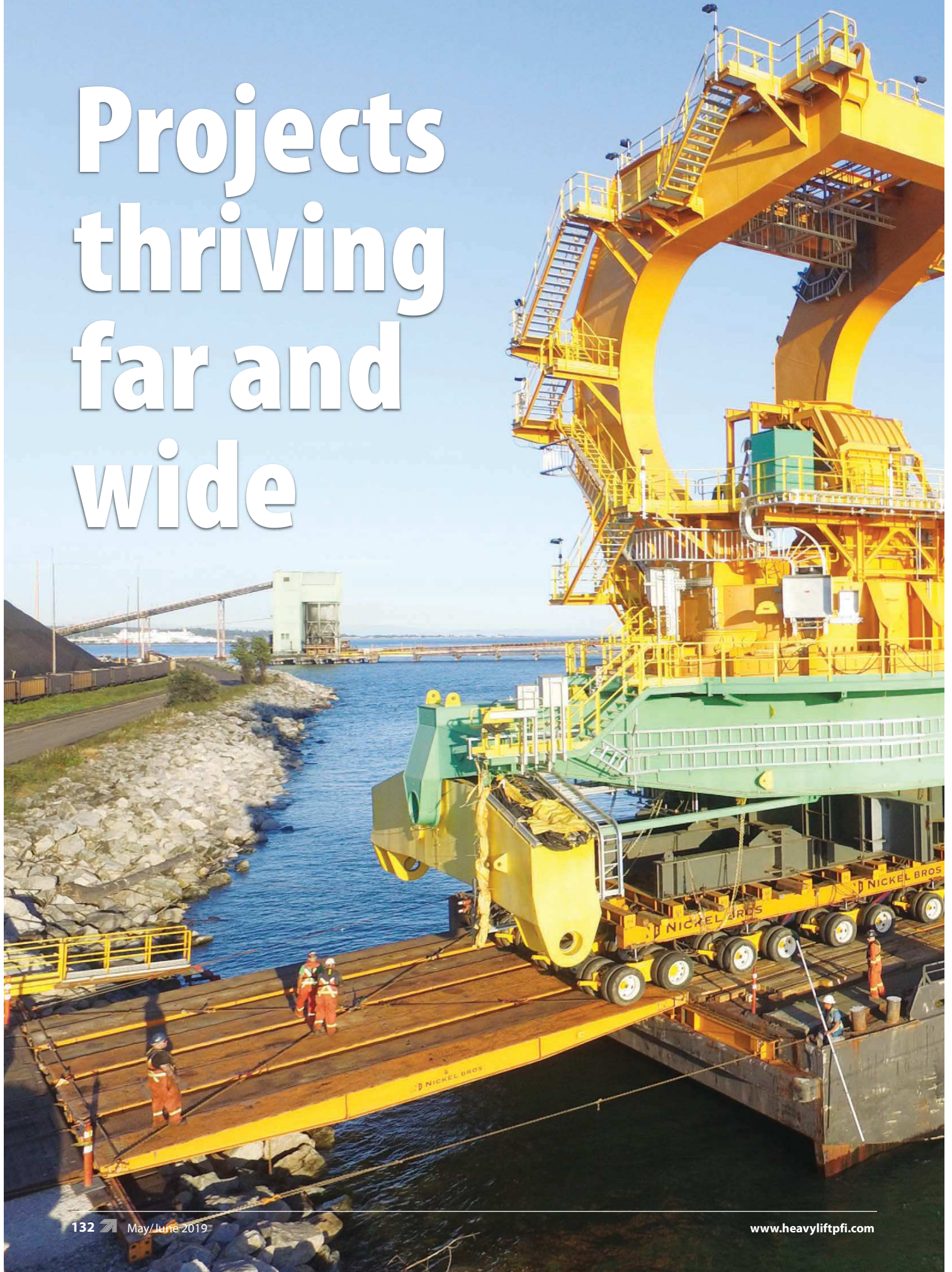


# Projects thriving far and wide





As the replacement of a major bridge in Montreal is completed, a landmark LNG project on the West Coast begins. In between are upgrades and expansions to coal terminals and breweries. *Gregory DL Morris* discusses the opportunities on offer for the country's project logistics sector.

Voltaire notoriously dismissed Canada as “quelques arpents de neige,” a few acres of snow. It is actually 3.6 million sq miles (9.9 million sq km), which is about 2.5 billion acres. On and under that few billion acres are some of the world's richest natural resources: oil, gas, coal, precious and industrial metals, inorganics, and timber. All of that needs extracting and processing, which means machinery and heavy industry. The lack of major navigable rivers means the land transport side of heavy lift and project cargo often comes to the fore.

Even when projects are developed at the coast, there is often little

between sea and cedar. A case in point is Canada's latest major industrial development. An international consortium of energy companies, led by global energy major Shell, is just starting site preparation at Kitimat, British Columbia, for the world-scale LNG Canada complex.

### Kitimat development

Kitimat is 400 miles (643.7 km) north from Vancouver, opposite the Haida Gwaii (Queen Charlotte Islands). Rio Tinto Alcan has a large aluminum smelter there, but there is no commercial industrial port and no formal port authority.

The Shell consortium, and its contractor group led by EPCs Fluor and JGC, plan to build the LNG train as modules with final

assembly on site. That means heavy lift ships navigating 60 miles (96.6 km) up a twisting arm of Queen Charlotte Sound from the Pacific Ocean, and challenging landings on what is today mostly shingle.

The owners and contractors will have to build a port before they can build a plant.

At the time of writing, all of the major heavy lift and project cargo companies active in Western Canada were expecting formal requests for proposal (RFP) by the end of April, with awards for the initial work going out in May or June.

“Everyone is getting their ducks in a row for Kitimat,” stated Erik Zander, director of sales at Omega Morgan.

“LNG is the number one project on the horizon,” said Tom MacLeod, commercial



Nickel Brothers' core business is ro-ro project cargo shipments using barges.



vice president for Mammoet Canada West, based in Calgary, Alberta. “We are expecting RFPs any day now, so I cannot say too much ahead of that process. I do feel that we are in a strong position based on our capabilities and also on our existing relationship with the First Nations.”

Unlike in the USA, native sovereignty is strong in Canada and supported by federal law. Part of the struggle that midstream energy companies have had building new or expanded pipelines for oil or gas from British Columbia and Alberta to tidewater or to the USA, is failing to collaborate with First Nations. Tribes vary widely in their support for industrial development and many a billion-dollar project has foundered as a result of high-handedness in dealing with indigenous peoples.

### First Nation joint venture

For its part, Mammoet is already operating under a joint venture with the local Haisla First Nation. Based on publicly available plans for the project, MacLeod was able to sketch out thoughts on the heavy lift angle of the project. “Modules will be coming in from China [and other manufacturing sites] on large vessels. The modules will be offloaded onto SPMs and moved about 4 km to the site. The offloading facility has yet to be built. We expect to be able to bring marine terminal cranes in for offloading.”

For the time being, Mammoet has opened an office in Kitimat, and has just started work helping to build the worker camps that will house the project crew.

Kitimat, as a town, was planned by the Aluminum Company of Canada in the 1950s, and today has a population of just 8,000. Adjacent to the smelter there is a deepsea dock built by a pulp and paper mill that ceased operations in 2010. Rio Tinto Alcan bought the dock and has since sold it to the LNG developers.

“From the pulp and paper dock it is a straight shot back to the LNG site,” said Mike Dewar, director of economic development for the District of Kitimat, the regional and municipal jurisdiction. Noting that some preliminary site work has already started, he added: “The district is considering development beyond the LNG terminal. A project that large certainly brings a draft of opportunity behind it.”

Given the size of the LNG project, it is widely expected that heavy lift facilities beyond the immediate construction zone will be important for staging and marshalling. “There has been industry up there for years,” said one source. “It will be interesting to see how the third-party logistics companies

Mammoet expects RFPs for the LNG Canada project in Kitimat to be issued very soon.



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— Tom MacLeod,  
Mammoet Canada West

approach this project. Vancouver is already busy. Prince Rupert (British Columbia) is a container and cruise port, not project cargo. Stewart World Port, [also in British Columbia] is new, up and coming.”

Several sources speculated that, other than for the main modular components, a logical approach would be to use other ports in the region for staging barge relays to and from Kitimat. There is not much water area at the head of the inlet.

### Growing opportunities

While carriers, riggers, and forwarders wait for RFPs and then awards in that plum LNG project, there is a great deal of other project cargo work across Canada’s 2.5 billion not-always-snowy acres. That volume of business may come as a surprise to those who only hear about stalled pipeline projects.

That bottleneck is real, and so are new approaches. “In 2018, the provincial government of Alberta announced a petrochemical diversification programme,”

said Mammoet's MacLeod. "The government is providing royalty credits to build on raw materials that are available."

For decades, the province has mostly exported hydrocarbons. The only downstream processing has been Nova olefins and polymers complex at Joffre, about halfway between Calgary and Edmonton. There has also been some gas-based fertiliser production.

The first project under the diversification programme is already under way. "We have brought in a PTC 35 ring crane to erect towers for the Inter Pipeline Company polymers complex near Fort Saskatchewan," said MacLeod. Called the Heartland Petrochemical Complex, it will convert propane, a natural gas liquid that is oversupplied in the province, into 525,000 tonnes per year of polypropylene – a commodity plastic most familiar in food-storage containers.

The big lifts in the CAD3.5 billion (USD2.61 billion) project are three process towers for propane dehydrogenation, purification and polymerisation. The facility is scheduled to come online in 2021 near Inter Pipeline's existing Redwater olefinic fractionator.

### Final investment decision

Another similar project is being planned by the Canadian Kuwaiti Petrochemical joint venture. The final investment decision (FID) has been made, and MacLeod said that Mammoet will be an eager bidder once the process starts.

"Over the past few years the entire industry has gone through a downturn," MacLeod added. "We have actually been shedding some cranes and trailers to other parts of North America and the rest of the world. Only recently have we thought about adding assets again." That could be moving some back, building or buying.

Mammoet has two PTC 35s as well as two PTC 210s in its global fleet, along with other large cranes. The pool is managed worldwide out of its Utrecht office in the Netherlands.

While most of the oil and gas development in Canada to date has been in Alberta, there is also a growing segment in British Columbia. That, too, has to contend with rugged mountains and vast distances to get the molecules to market.

Beyond oil and gas, there has been some development in coal and power that has generated project cargo handling opportunities. Mammoet has done some work for the mining sector in the Crowsnest Pass area of British Columbia. "There is also



Nickel Brothers completed three projects last year to replace major equipment at the Westshore Coal Terminal to the south of Vancouver.

a significant amount of work in large turbines for wind power," added MacLeod. "We have a dedicated business development team solely for wind energy across North America. The major areas for development are West Texas, the US Midwest, and the Pacific Northwest, Washington, Oregon, Idaho and into southern Alberta."

Given the diversity of projects, MacLeod added that his firm "continues to add dollars to research and development." During April, Mammoet confirmed that it is moving forward with the development of its Focus crane concept, which it claims will be the ideal heavy lift solution for projects in

confined spaces.

"It is similar to our ring cranes but with a smaller footprint. It is being designed specifically for heavy work in places like older refineries where there are tight spaces within the existing pressure vessels and pipe racks." Mammoet said that the Focus crane is likely to be available in the second quarter of 2020.

Even if there are not yet new pipeline projects, midstream companies are doing their best to de-bottleneck existing capacity. "We just finished a number of moves for new or upgraded gas compressors," said Zander at Omega Morgan. "We hauled them from the manufacturer in California to northeastern British Columbia using nine-axle Cozad trailers, then cross-loaded to a Faymonville trailer to back into the building."

### End-to-end projects

Increasingly Omega Morgan is taking on projects end to end. "We have built our company on turnkey work, typically inland," said Zander. "I personally see a lot of value in 3PLs, and we like working with them. We do not chase a lot of ocean freight. We prefer to let the 3PLs handle that. They do a good job and we can focus on services when the load arrives, from trucking to jacks or cranes on site through to installation."

On the export side, Omega Morgan has already been working on crating and other preparations for project loads destined for overseas. "Potentially we are looking at meeting them on the other side as well," Zander added. "That can minimise cost and risk. I have yet to see a trucking company that is also handling the offloading to then charge the shipper standby if its own truck is late."

Omega Morgan is also reporting an



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– Erik Zander, Omega Morgan



uptick in work for renewable energy cargoes – particularly wind – in Alberta. “We used to do some wind farms in [the province of] Ontario, but this year and next it is mostly Alberta. We are also doing hydroelectric projects. People sometimes forget hydro is renewable – we have been involved in dam projects for years. We have also done a bit for mining projects in British Columbia.”

This is not to say that Eastern Canada has been idle. Indeed, the current largest project in the country is the replacement of the Pont Champlain bridge that spans the St Lawrence River into Montreal. The 1962-built steel-truss cantilever bridge is being replaced with a cable-stayed bridge and is scheduled for completion this summer. The project is similar to the replacement of the Tappan Zee bridge across the Hudson River north of New York City, which was completed last year.

The Champlain Bridge replacement is a showcase project for Bellemare Group, based in Trois Rivières, Quebec. “This is the biggest construction project in North America,” said Kevin Kwateng, director of heavy haul operations. “Those types of job usually go to the Mammoets and the Sarens of the world. We moved about 4,000 girders, each weighing 60-70 tonnes, that were assembled into 300 ft (91.4 m) beams.”

### Pressure vessel move

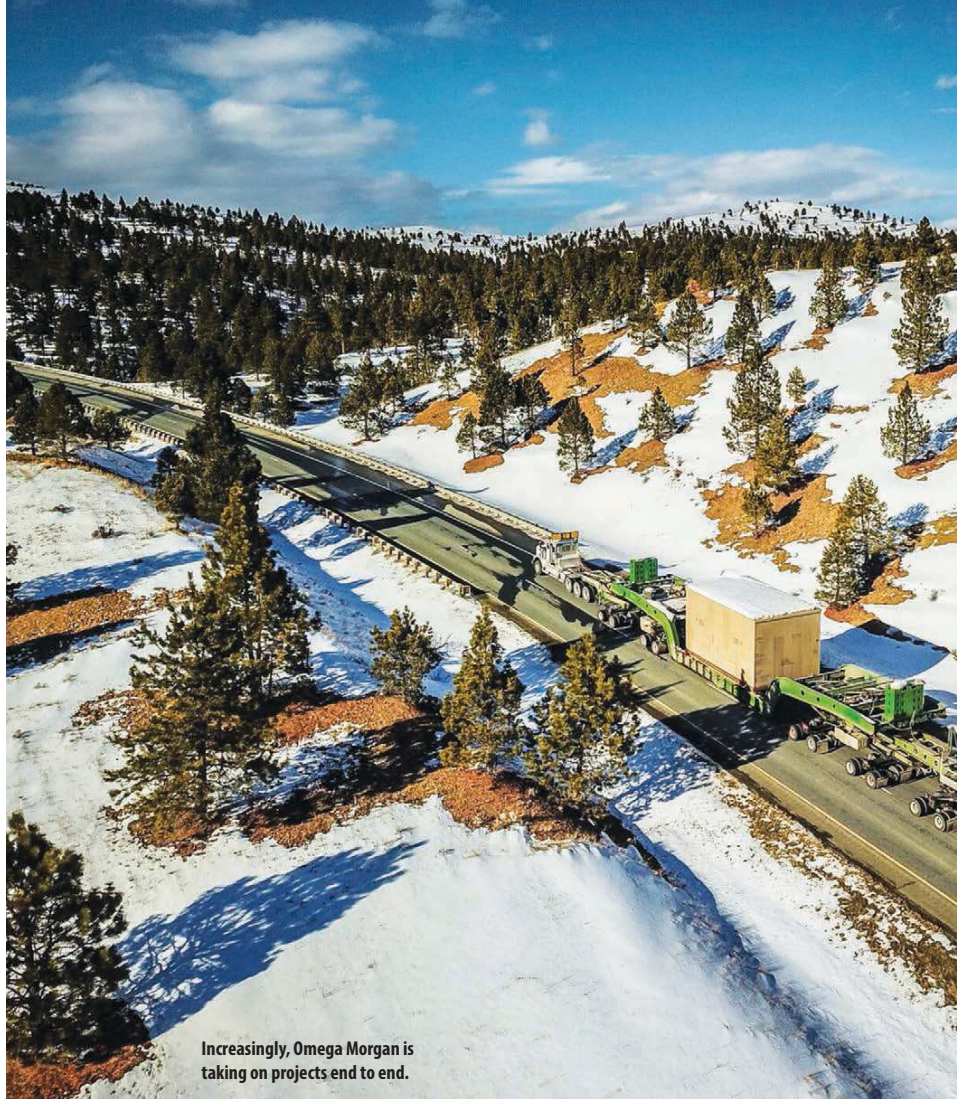
Separately, Bellemare has just completed its first move of a pressure vessel from Canada to the USA – a reactor for Marathon Petroleum’s refinery at Detroit.

“It was 350,000 lbs (158.8 tonnes), and we handled the entire logistics process,” said Kwateng. “We hired the barge and handled all the loading, welding, balancing and ballasting, through to offloading and delivery. It was our first big project with offloading in the USA. We now have our feet on American soil.”

Kwateng said his company was able to win and complete such projects in competition with global majors because of its local knowledge and capabilities. “We have a yard just 15 minutes away and we know how to work with the local unions. On lump-sum projects, time is the enemy. Local personnel, equipment, and knowledge reduce downtime.”

On the equipment side, Bellemare has added 40 axle lines of SPMTs, and converted its entire fleet to bio-oils for fuels and hydraulics. “The bigger firms have not wanted to do that because they could not easily convert their whole fleet, and do not want to mix and risk contamination.”

Bellemare operates in two divisions. One



Increasingly, Omega Morgan is taking on projects end to end.

handles over-the-road shipments across North America up to 15 axles. The other does heavy haulage and rigging in Ontario, Quebec, and Canada’s Maritime provinces. While taking a hand in wind energy, Bellemare is also active in several public transport projects in Eastern Canada. That includes tunnel-boring machines (TBM) and electrical equipment that must be installed underground.

### Coal activity

If there has not been a lot of equipment moved into or around Canada for coal mining, there certainly is activity in coal loading. In August 2018, Nickel Brothers completed a series of three projects to replace major equipment at the Westshore Coal Terminal just to the south of Vancouver. It is a major export facility for US-mined coal from the Powder River Basin in Wyoming. The equipment includes stacker reclaimers, bucket wheels and shiploaders.

Nickel Brothers is also working on similar projects for Neptune Terminals within the port of Vancouver. Neptune handles coal and potash; the latter is one of the major exports for Canada. In several cases the coal handling equipment was

partially fabricated in China and finished at Supreme Steel in Canada.

Supreme is also providing components for the one oil pipeline that is progressing, the expansion of the Trans Mountain line from Edmonton to Burnaby, British Columbia, near Vancouver. “We have moved 20 to 30 components, some of significant dimensions,” said Timothy Nickel, general manager of the company’s industrial division. Broadly, he noted: “As oil and gas projects have declined, there has still been work in potash, and some expansion in grain and coal, even cement.”

The core business for Nickel Brothers is ro-ro projects using barges. “In that we exceed any other carrier on the water,” claimed Timothy Nickel. Landside, “we offer factory-to-foundation projects including installation on site. In this business there is a major gap between delivery and installation. If we handle the whole thing, the risk of standby falls on us.”

An interesting challenge was installing new kettles at Molson’s newest and largest brewery in Chilliwack, 60 miles (96.6 km) up the Fraser River from Vancouver. “We used a different system and moved the tanks in groups,” said Timothy Nickel. “The building had a low ceiling, so we installed





them four at a time. Tying them together also made them more stable in transit.” The system worked so well it will be used at another new Molson Brewery project outside Montreal.

### New forwarder

In a back-to-the-future moment, one of the newest project freight forwarders in Canada is Ambercor Shipping. President Gerald Hess, and vice presidents Christian Wagner and Marcel Hafemann, co-founded Albacor Shipping in 1998. That grew to 20 offices in four countries before it was acquired by BNSF Logistics in 2012. To varying degrees, the partners stayed with BNSF until reuniting to found Ambercor in 2018. It has offices in Toronto, Calgary and New York.

“There are lots of smaller projects across the USA and Canada, and a lot of forwarders in Europe that struggle with local moves in North America,” said Wagner. “They just have not had regular partners in North America

to execute this side of the project.”

One current project for Ambercor is for an operator in the Alberta oilsands. It has required 120 containers, 40 to 50 flatracks, and 60 breakbulk shipments. Cargoes have landed at Houston and Freeport in Texas, and at Tacoma, Washington, for the long land haul to central Alberta.

Project cargo shipments have included items up to 21 ft (6.4 m) wide and 120,000 lbs (68 tonnes), said Wagner. “In one case the plan was to ship a load from Europe to British Columbia. But because of a change in the manufacturing schedule, the optimum ocean leg was to Houston. That shrank ocean time, but increased landside, which is also more expensive.

But it put us back in the game for the project schedule. Everyone was able to adjust.”

Ambercor has also moved coal-handling equipment and electrical transformers, as well as some equipment for upgrades at steel mills in Canada. The firm is also involved in the Molson Brewery project outside Montreal. One of the more unusual projects has been replacing the boarding bridges at Toronto’s Lester B Pearson International Airport.

“This is what we do,” said Wagner, “not so much the major projects but revamps and upgrades in steel, coal, petrochemical, power and brewing. Of course, we do hope to be involved in the Kitimat LNG project. We have ties to one of the possible pipe manufacturers.” **HLPFI**

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