



SPECIAL FEATURE

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DEMOLITION & ENVIRONMENTAL ENGINEERING

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SUBMITTED PHOTO

The four-phase demolition contract for the former Resolute Forest Products pulp and paper mill in Fort Frances, Ont. was awarded to Canadian National Demolition of Uxbridge, Ont. The most complex part of the demolition involved an overhead gallery that crosses the international bridge on the Canadian side. The gallery contains piping once used to transport steam, gas, water and pulp between the two mills.

Economic Snapshot

B.C.'s economy is firing on all cylinders heading toward 2022



John Clinkard

Four key factors have caused the B.C. economy to outperform the country as a whole since the beginning of this year and will likely result in it continuing to do so into 2022. First, the B.C. economy was sideswiped by the second wave of COVID-19 and not hit head-on as was the case for most other provinces. B.C. employers, particularly those in service-related industries, did not have to lay off staff over the winter months. In March, total employment rose by +6.5% y/y, the best gain in the country.

Going forward, although the number of COVID-19 cases has escalated sharply since late February, at 2,274 cases per 100,000 individuals, the province has the sixth-lowest infection rate in the country. Also, B.C. has implemented strengthened province-wide restrictions that are scheduled to expire in late May.

Given the federal government's glacial pace of vaccine distribution, the cloud of uncertainty due to COVID-19 will likely hang over the country and B.C. for some time. Nevertheless, a full lockdown of the province appears unlikely.

B.C. hiring is in high gear

Fuelled by an uninterrupted increase in total employment, record low-interest rates, and rising consumer confidence, consumer spending in B.C. has, over the past six months, increased by a country-leading +10.7% y/y. The outlook for consumer spending remains bright given the positive outlook for hiring, persisting low interest rates and a sustained rise in good consumer expectations.

Strong U.S. growth should continue to drive exports

A second major driver of the robust economic activity in B.C. has been exports which, over the past six months, have been up by +8% y/y, primarily due to a +85% increase in sales of forest products, the bulk (94%) of which are sold to customers in the U.S.

The American marketplace accounts for 64% of B.C.'s total foreign sales. Given recent upward revisions to U.S. growth forecasts, inspired by the recently passed \$1.9 trillion U.S. stimulus package, the outlook for B.C.'s export sales appears very bright.

Expect post pandemic increase in net migration

A third contributor to the province's economic health has been the sustained inflow of migrants both from within and, more recently, from outside the country. Although lockdowns across the country have been severely limiting interprovincial migration, B.C. has been alone in welcoming (net) migrants from other provinces.

In 2020, 23,000 individuals from within Canada moved to the province, a four-year high. In addition, as noted in Snapshot #7 titled, "Expect Canada's Population to Recoup Lost Ground in 2022," B.C. should attract more students and youth from Hong Kong following the Chinese government's recent overhaul of Hong Kong's electoral system.

B.C. has hottest housing market in country

The combination of strong jobs growth, a record inflow of migrants from other provinces, and near record-low interest rates have launched housing demand in British Columbia into a high orbit. Year to date, home sales are up by +96.9% y/y, just slightly less than twice the national increase of +53% y/y. As a result of this strong surge in

sales, the months' supply of homes for sale has fallen to an unprecedented low of 1.9, while average house prices have risen by +18.7% y/y.

The very strong uptick in demand has given a boost to supply. Year-to-date housing starts in the province are up by +53% due to gains in apartments (+62%), row units (+47%) and single-family units (+41%). Given this strong year-to-date pattern of new construction, we expect that, after hitting a four-year low in 2020, housing starts should range from 38,000 to 44,000 units this year and from 34,000 to 38,000 in 2022.

Energy projects are the major driver of non-res construction

The improved outlook for residential construction has been accompanied by an increase in non-res capital spending which should persist through the remainder of this year and into 2022. This prospect is reinforced by a recent *Royal Bank Provincial Outlook for British Columbia* and by Statistics Canada's *Non-Residential Capital Expenditures (2021) Intentions survey*. The latter survey indicates that, following a COVID-19 depressed gain of +2.4% y/y in 2020, industries plan to increase their spending on non-res construction and machinery and equipment by +5.7% in 2021.

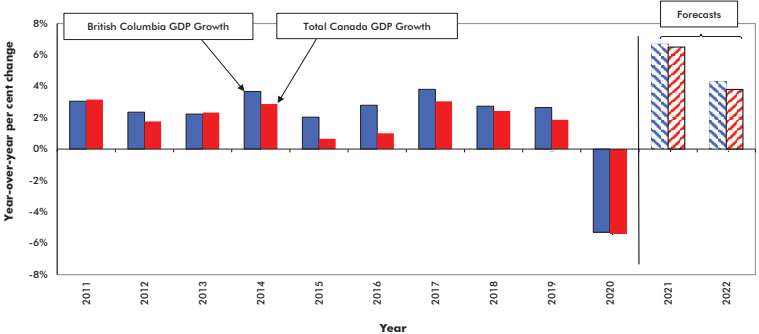
The largest contributor to the +5.7% total increase will be a +31% rise in spending by the oil and gas industry, due in part to increased spending on the Coastal GasLink pipeline, the LNG Canada in Kitimat project and the Trans Mountain Pipeline. As well, major spending is ongoing for the Broadway Subway project and the New St Paul's Hospital. Also, in the *just-released budget*, the province's Minister of Finance announced taxpayer-supported capital projects of \$26.4 billion, up +\$3.5 billion from the 2020 budget.

B.C. should outperform the rest of the country this year and maybe next

Given its positive prospects for consumer spending, exports, residential and non-residential construction, accompanied by its increasing vaccination rate against the background of a below-average COVID-19 infection rate, we expect the B.C. economy will outpace the rest of the country this year and quite possibly again in 2022. After contracting by an estimated -5.0% in 2020, B.C.'s growth will likely range from +5.7% to +6.5% in 2021 and from +4.0% to +4.5% in 2022.

John Clinkard has over 35 years' experience as an economist in international, national and regional research and analysis with leading financial institutions and media outlets in Canada.

Real* Gross Domestic Product (GDP) Growth – British Columbia vs Canada



* "Real" is after adjustment for inflation.

Data Sources: Actuals — Statistics Canada; Forecasts — CanaData.
Chart: ConstructConnect — CanaData.

Canada-U.S. border is closed for demolition of Fort Frances paper mill

PETER KENTER
CORRESPONDENT

It's not a request that Canadian National Demolition (CND) takes lightly, but the safe demolition of part of the former Resolute Forest Products pulp and paper mill in Fort Frances, Ont. required a full overnight closure of the international border crossing between that town and International Falls, Minn.

"The planning that goes into closing an international border is beyond anything most people can imagine,"

Jeff Norton
Canadian National Demolition

The mill was built in 1912, as was the original private international road and rail bridge, owned by the Minnesota and Ontario Paper Company. The bridge, which remains the only connection between the two communities, is still jointly owned by Resolute Forest Products on the Canadian side and Boise Cascade, which continues to operate a pulp and paper mill in International Falls. The Fort Frances mill was closed in 2014 and its assets were sold to a numbered company under Riversedge Development in 2019.

The four-phase demolition contract was awarded to CND of Uxbridge, Ont., which began work on Nov. 1, 2020. The company is assigning 25 workers to the project and about a dozen excavators, including high-reach models, all equipped with heavy shears.

The contract includes hazardous materials abatement, engineering, materials processing and shipping of scrap and encompasses more than a million square feet of buildings, three paper machines, a kraft mill (used to convert wood to pulp), a biomass plant and a co-generation plant. The tallest structure is a 65-metre stack associated with a recovery boiler.

The most complex part of the demolition, however, involved an inauspicious overhead gallery that crosses the international bridge on the Canadian side. The gallery contains piping once used to transport steam, gas, water and pulp between the two mills.

"The planning that goes

into closing an international border is beyond anything most people can imagine," says CND president, Jeff Norton.

"It required us to negotiate with the Canada Border Services Agency (CBSA), U.S. Customs and the Minnesota Department of Transport for starters. But we also had to negotiate with the hospitals and the paper mill in International Falls to ensure they could still continue to rely on essential Canadian workers who needed to make shift changes."

Norton analyzed traffic counts supplied by the CBSA to determine when a border closure would involve the least disruption. He also worked with local trucking companies on both sides of the border to ensure that critical supplies were not delayed and that transports weren't lined up at the border during closure.

Ultimately, all parties agreed that a closure lasting from 8 p.m. on Saturday, March 20 to 4 a.m. on Sunday, March 21 would cause the least disruption.

"Ensuring we could complete the demolition of that gallery in an eight-hour timeline required a lot of pre-work," says Norton.

"We were working from original drawings that date back to 1924. The configuration of the gallery and piping was so tight that we needed to send in workers to hand cut a lot of the structure. With pre-engineering and air gapping we could ensure that the gallery would still be standing prior to the border closure but come down as quickly as possible once it closed. We performed our final pre-cut literally at the moment of border closure."

The unexpected arrival of gusts of wind of up to 90-kilometres per hour over the falls added to the challenges of removing the gallery under tight timelines. High-reach excavators easily tore through most of the century-old structure, but parts of it remained surprisingly resilient.

"Even with the pre-cuts, removal of the gallery required the full eight hours to complete," says Norton. "By 4 a.m., we had it neatly stacked on another part of the property, waiting for recycling. Cars and trucks started to cross the bridge a few minutes later."

Norton estimates that the demolition project will be substantially completed before the end of 2021, leaving the property ready for redevelopment.



“This year, more than ever, the health and safety of workers has been front of mind on job sites. We must commit to protecting workers and prevent further workplace tragedies.”

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Priestly demo of diamond mine a ‘middle of nowhere’ job

IAN HARVEY
CORRESPONDENT

The crews at Priestly Demolition often work in tight spaces and downtown traffic congestion but a recent project had new challenges: no traffic, no people and wide-open spaces.

As president Ryan Priestly explains, the De Beers Canada Victor diamond mine was “literally in the middle of nowhere” and some 500 kilometres from Timmins in northern Ontario with no access road.

“We had to fly in the crews and the equipment on a Hercules aircraft,” he says. “We took our own high reach shears, a couple of extractors, a shredder and a scale (to weigh the scrap in preparation for shipping it south for recycling when the ice road — which was decommissioned when they were working on site — is rebuilt at some future point).

“We also adapted some of the equipment they had up there and had been using on the mining,” he says, such as the huge rock trucks and front-end loaders.

After landing the job in summer 2019 they scoped and planned it out through the fall and went up and did some preliminary work.

“The good news was that we had time to make a plan. Sometimes you don’t get time, you get the job on a Thursday and they want you to start on a Monday. What was nice was we got the job in the summer and had time to schedule and plan.”

When they did start up in early 2020 because a spell of warmer weather opened up in January, they were almost immediately hit with a COVID stoppage in March.

“We were all fine up there but the issue was if someone did get sick how would we deal with it, so we shut down for two months,” he says of the crews flying in and out on a twin engine commuter plane. Worked resumed by summer and wound up by fall 2020.

The project was nominated for a World Demolition Award — an honour Priestly has won four times before — but while they made the short list they didn’t win the price.

They won the demolition contract as part of the closure plan for the De Beers mine which had reached the end of its life cycle after just 11 years, right on schedule.

The \$1 billion mine contributed more than \$6.7 billion in cumulative GDP to Ontario since opened in 2008. The total contract for the remediation of the site, filling in the open pit



SUBMITTED PHOTO

Priestly Demolition crews and equipment had to be flown in on a Hercules aircraft for the De Beers Canada Victor diamond mine project in northern Ontario.

mine and restoring the land is about \$32 million and is being managed by Golders. It includes adding to the 1.2 million trees planted since 2014 and will wrap up sometime in 2023.

Priestly hired a Hercules cargo plane and shipped their equipment up and then put together two crews each working and living on site in the camp structures originally created for De Beers workers.

“At one point they had 400 people working the mine but we had 10 to 15 people at a time and up to 25 at other times,” says Priestly.

“We had some Attawapiskat (about 100 kilometres away) First Nations people but a lot of them have other jobs because they fly in and out. So, we had people from across Canada including Newfoundland and people who had worked at the mine. They were good because they had created a culture up

there and they know the routine. People were always smiling in the hallways. It was good.”

The site sits on muskeg so it’s soft ground and there are no trees around. The landscape is almost alien, like a Martian surface and there’s nowhere to go for a walk or do anything, Priestly says.

It was also cold in winter with a cutting wind.

“When it was really cold we would work inside,” he says. “We had the cutting torches going and if you got really cold there was a building there with heat you could go into to warm up a bit.”

They brought their own mechanics with them and often had to figure out repairs on the fly, he says.

“It’s not like you can call for parts or back up so you have to figure it out,” he says.



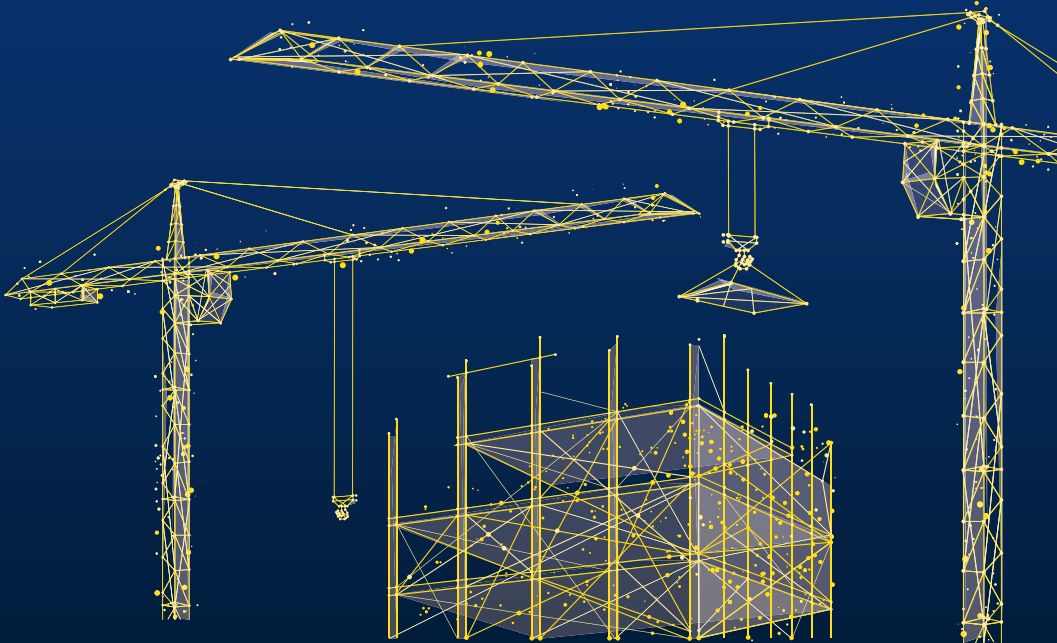
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Lakeview community to finally get...a view of Lake Ontario

DAN O'REILLY
CORRESPONDENT

A new park is rising from the waters of Lake Ontario in Mississauga, Ont. and the speed in which it is evolving would probably please, maybe even thrill, former city councillor Jim Tovey.

Being built right in the lake from construction debris, the 1.6-kilometre-long, 26-hectare Jim Tovey Lakeview Conservation Area is named in his honour.

A former Citizen of the Year who died in 2018, Tovey was a major proponent of the park, which extends along the south edge of the G.E. Booth Wastewater Treatment Plant from the Marie Curtis Park on Mississauga's easterly border with Toronto west to the new Lakeview Village development on the site of Ontario Power Generation's (OPG) former Lakeview Generating Plant.

“For the first time in generations residents in the community...will have a chance to see the lake,”

Jesse de Jager
Credit Valley Conservation

The \$60-million project is a joint-venture partnership between Credit Valley Conservation, Toronto Region Conservation Authority and Peel Region. Construction started in 2016 and will be completed in 2025, says Credit Valley Conservation man-

ager of capital projects and assets, Jesse de Jager.

“We’re on track, on schedule, and on budget. The land form is basically complete, the fill material is at the 85-per-cent stage and the cap at about 60 per cent.”

Thousands of cubic metres of construction rubble from pre-approved suppliers, which otherwise would have gone to landfill sites, was used to erect an eight-metre-wide berm wall to protect five containment cells. In the deepest part of the lake, stretching from about the park’s mid-point westerly, the berm is being reinforced with two layers of armourstone. The eastern shoreline will consist of cobblestone thanks to the creation of three armourstone islands which will function as break walls.

“The islands will restrain the energy of the lake.”

As for the cells, they are in different stages of a Cinderella-like transformation into meadows, forests, trails, gathering spaces, and two wetlands. They are being formed with reused fill from Peel Region’s own infrastructure projects and will be capped with clean fill, also from pre-approved suppliers.

An average daily count of 140 trucks have entered and exited the site since construction started, with, at one stage, that figure reaching 350.

“We were down to about 60 trucks last month.”

At this stage of the project, 1.2 million cubic metres of fill has been placed, more than 254,300 cubic metres of construction rubble reused, 20,748 trees and shrubs planted, and five hectares of new



SUBMITTED PHOTO

Cell 3B is in the deepest part of the near shore area and requires revetment coastal protection due to strong wave action. When completed, this area will be known as the promontory and trails will lead to the top of this land form, reaching 14 metres above lake level.

wetlands created, he says.

There are two wetlands, the Serson and the Applewood, named after the Serson and Applewood Creeks. Located on the west side of the conservation area, the Serson Wetland has been completed and is now the home of 20,000 native wetland plants, with 1,000 native trees around the perimeter. The creeks will be diverted into the wetlands and restored into more natural watercourses with thousands of trees and shrubs, he says.

About 500 metres of the Serson Creek is currently buried and flows through a pipe under the G.E. Booth Wastewater Treatment Facility with no physical connection to Lake Ontario for fish to live or travel upstream.

The restoration will get underway later this spring with the assistance of the Lakeview Com-

munity Partners, the developers of Lakeview Village. It will be “daylighted” and fish will once again be allowed to move up and live in the watercourse, something that hasn’t occurred in decades. After this phase of the project is finished, the creek will reconnect Lake Ontario to its upper portion through the Lakeview Village lands, he says.

In highlighting the collaboration with the development consortium, de Jager cites other benefits. Concrete debris from the old OPG facility is being used to accelerate the construction of the cells, eliminating the expensive process of trucking the concrete offsite and also facilitating faster site work on the Lakeview Village lands.

“It (the collaboration) is win-win for both parties.”

A temporary truck access to the park is also on the develop-

ers land and will eventually be restored, he says.

Construction of the Applewood Wetland and the extension of the Applewood Creek, which are on the park’s east side, should be finished later this spring, says de Jager.

For a project of such monumental scale, the construction of the Jim Tovey Lakeview Conservation Area is “going remarkably well.” The main challenge was the planning, design, and the co-ordination among the two conservation authorities and the Region of Peel, he says.

“It will be spectacular. For the first time in generations residents in the community, which is called Lakeview, will have a chance to see the lake,” says de Jager, in commenting on what the conservation area will look like when it’s open to the public in a few years’ time.



SUBMITTED PHOTO

A view of the newly constructed Applewood Creek channel as it connects out to the new shoreline. Fish spawning habitat features and shoreline plantings will bring new life to this creek mouth.

Mm! Mm! Gone



IAN CONWAY/PROGRESS PHOTOGRAPHY

Priestly Demolition continues to tear down the old Campbell's Soup Factory in Etobicoke, Ont. for redevelopment. The owner is QuadReal Property Group and the owners' reps are Weston Consulting and Stikeman Elliott. The redevelopment plans proposed include an urban distribution and logistics facility within three single-storey warehouse buildings with two connected at grade. The project would also include the retention of portions of the existing 1931 and 1944 building facades along Birmingham Street. The redevelopment will provide onsite parking and 86 loading dock spaces. The architect for the project is Ware Malcomb Architecture. Press play to see the DCN Drone Zone flying over the site as demo work takes place.



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Demolition of Lambton coal plant complex but running smooth

DON PROCTER
CORRESPONDENT

Demolition is underway on one of Ontario’s last coal-fuelled plants — the Lambton Generating Station in southwestern Ontario.

Work to date has gone smoothly considering the complex nature of the project, which consists of structures sprawling over a 1,300-acre site that had a power generating capacity of 1,976 MW at its peak, says Dan Roorda, Ontario Power Generation’s (OPG) project manager for the demolition and decommissioning.

Roorda describes a planning and engineering process to the job that is much bigger than it might appear to passersby.

“Identifying the stakeholders, the risks and planning the work in an orderly fashion is complex and very different from construction of a new generation facility.”

Developing a specification for the demolition “took many months,” he points out.

“A lot of engineering” went into planning the disconnection of utility services of the powerhouse — “the hub of the site” — and reconnecting them from a different power feed to facilities such as the main gate, dock, truck scale and an office building that will remain in service while the demolition takes place.

“At the end of the day we wanted to eliminate all hazardous energies from the powerhouse and turn it over to the (demolition) contractor in a black state (no energy) so they could start anywhere and everywhere in taking things apart.”

OPG began the decommissioning in 2016 because it couldn’t get the green light from the province to re-outfit the coal facility with natural gas. The plant had been shuttered since 2013.

JMX Contracting was awarded the demolition contract this summer after OPG had done extensive work, including the removal of hazardous substances. For instance, it drained oils from transformers and removed a PCB storage compound, says Roorda. Some of the oils can be resold, if they are PCB free.

JMX’s \$30 million contract primarily covers mechanical demolition (taking down all the buildings) but asbestos remediation and draining and removal of excess oils that could not be removed by OPG are included in its contract, he says.



The Lambton Generating Station in southwestern Ontario was one of the province's last coal-fuelled plants. The structures, sprawling over a 1,300-acre site, had a power generating capacity of 1,976 MW at its peak. The plant is now being demolished.

Demolition of the two west smokestacks is scheduled for demolition next summer while the remaining east stack will be dropped in 2020. The 550-foot-tall stacks will be imploded, says Roorda, noting that JMX will sub out the work.

The project manager says the proximity of the stacks to the site’s switchyard presents a challenge to mitigate damage risk from vibration, flying debris and the dust cloud. Mitigation includes noise buffers (berms possibly comprised of scrap from the demo) and dust abatement, including water spray, dust curtains and debris shields.

Populations impacted by the project include First

Nations, the community of Courtright residents in Michigan state just across the St. Clair River from Lambton.

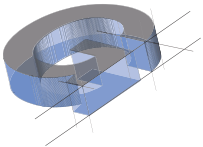
The third and final phase, an environmental closure plan, will include cleanup of the sewage lagoon and various ponds, Roorda says, adding the total demolition and environmental cleanup tab is estimated at \$60 million.

No plans have been made for the site once demolition is completed, he adds.

While in principle the Lambton demolition is similar to the Nanticoke generating station demolition on Lake Erie, the two pose different challenges because the sites are configured “quite differently.”



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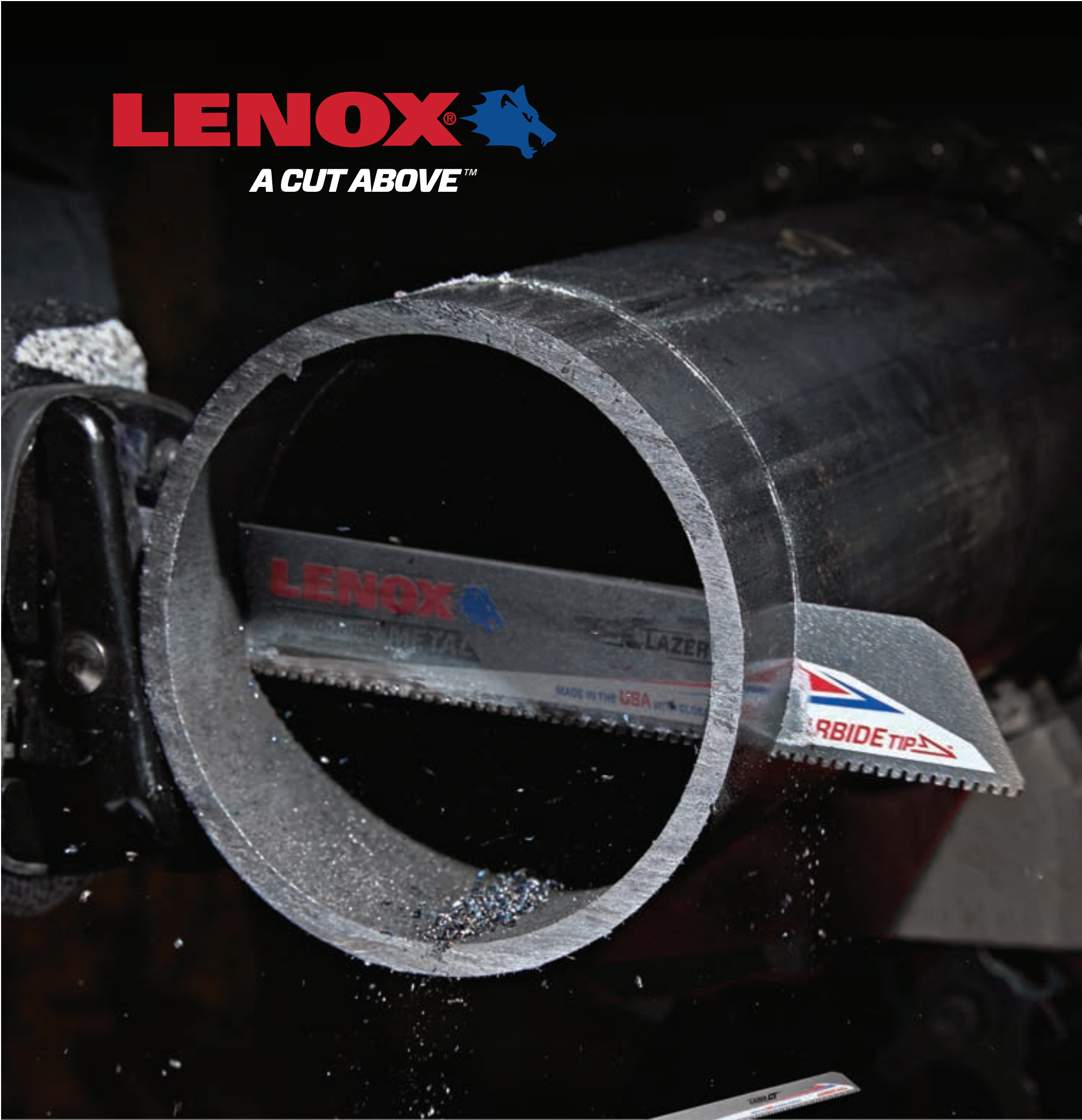
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