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SPECIAL FEATURE

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Labour

Strong metal trades recruitment needed, say sector stakeholders

JEAN SORENSEN
CORRESPONDENT

Metal trades in Western Canada will need to keep recruitment pressure on if they want to stave off severe labour shortages according to labour report surveys. But, even with recruiting efforts, some shortage of labour will occur and competition amongst employers will increase the price of labour.

The exit of skilled baby boomers is only one challenge faced but metal trades also face a job identity problem plus the rigours and hazards of the work.

Hardest hit is B.C., BuildForce Canada's regional labour report indicates that for B.C. the supply of boilermakers will not match market demand until 2025 while ironworkers and structural metal fabricators will face some acute shortages and not meet market demand until 2022.

"This trade picks you; you don't pick it,"

Doug Parton
Ironworkers Union Local 97

Chris Paige, president of the boilermakers Local 359, said supply is still matching demand on the union side. "We have a few retiring but we have the apprentices coming in to fill those positions," he said, but industries are down. He sees the need to kick-starting more B.C. industrial projects and sectors such as forestry, the marine sector, and energy, back on track to facilitate more apprenticeship training. As an example, he points to the pulp mill industry which in 1980 had 22 plants in B.C. and is now down to 13.

Paige said his trade is not for everyone as it is physically demanding, may involve months of not working and then working seven days a week, 12-14 hours days, in remote project.

"You grab your boots and be ready to travel," he said, a factor that can be hard on family life.

B.C.'s premier training facility for new entrants, the BC Institute of Technology (BCIT) has noted the trend. The foundation classes for ironworker — and boilermakers too — are not always full, said James Cai, associate dean, overseeing the institute's three metal-working programs: ironworker, boilermaker, and fabricator. BCIT's foundation courses work in conjunction with the unions, churning through two annual intakes of 16 students a year.

He attributes the empty seats to a lack of awareness by the general public regarding the job roles, especially ironworker.

"They are not familiar with it; the public does not see it as a popular trade," he said. Despite the identity crisis, the metal-related trades offers good perks. "It can pay very high wages," Cai said. A B.C. and Alberta medium wage in this trade ranges from \$64,000-\$70,000 annually.

In Alberta, the downturn of the oil patch has softened the blow. There will be some shortages of boilermakers in 2018,



BCIT/WENDAY D PHOTOGRAPHY

The metal trades, such as ironworker, will have to keep up strong recruitment drives to fill future demand but many face job identity challenges and BCIT's James Cai (at right), pictured here with a student, says foundation class seats are not always filled despite the good wages offered.

but afterwards while employers may still compete for tradesmen, the recruiting process should fill the void. That trend will also apply to Alberta's ironworkers and structural metal fabricators, according to BuildForce.

In Saskatchewan, recruiting will also fulfil employer requirements although there will be some competition for boilermakers and ironworkers. The glitch for ironworkers will come in four years when competition may up the price of labour. Recruiting is expected to fulfil Manitoba's requirements for boilermakers over the next decade although there will be competition for tradesmen and a greater supply of ironworkers is projected for that province.

Paul Beacom, president of Ironworkers Union Local 97, said his union is aware of the marketing challenge to draw in new entrants. However, working iron can also involve hazards. Recently, the 60th anniversary of the collapse of the Ironworkers Memorial Bridge was commemorated, marking one Canada's worst disasters as 69 workers fell into Burrard Inlet. Eighteen died as well as a diver employed to search for bodies of the fallen.

"This trade picks you; you don't pick it," said Doug Parton, business manager for the Local 97. It demands a degree of physical fitness, an adherence to safety, and a certain degree of fearlessness when it comes to heights.

"When you are standing 100, 300 or 400 feet on a small beam — that is where the rubber hits the road," he said.

For those who stay, it is more than a paycheck, he said. "In ironwork, there is a huge sense of pride," Parton said, add-

ing that ironwork is really the untold story in every metal building, dam, bridge, or large piece of equipment construction.

The Industry Training Authority of B.C. (ITA BC), registers both union and non-union apprentices. ITA BC's spokesperson Angela Osborne provided apprentice annual figures as of March 31, 2018, which showed 157 generalist ironworkers, 59 reinforcing ironworkers, 441 fabricators and 128 boiler maker apprentices. But, the ITA BC also does a monthly performance report and those numbers point to the fluctuations facing the metal trades. In March 2017 there were 170 generalist ironworkers, 62 reinforcing ironworkers, 455 fabricators, and 151 construction boilermaker apprentices. The June 2018 report further tracks shifting figures: with 168 generalist and 49 reinforcing ironworkers, 449 metal fabricators, and but only 106 boilermaker apprentices.

The 2017 Alberta Apprenticeship and Industry Training statistics for apprentices show a slackening of new entrants into the metal trades, a factor impacting long-term journey-men supply.

In 2012, there were 132 new entrants into the apprentice program for boilermaker but in 2016, that figure slipped to 57 and rose slightly to 68 in 2017. Ironworker and structural metal fabricator figures show a decline. In 2012, there were 810 new entrants into the program but that has plunged to 330 in 2017. Of those individuals: general ironworker entrants numbered 205 in 2012 and only 58 in 2017; metal building erectors entrants were 53 in 2012 and 23 in 2017; reinforcing ironworker figures showed 190 in 2012 and 123 in 2016 rising up to 180 in 2017; and finally ironworkers doing structural and ornamental figures show 362 in 2012 and 304 in 2016 dropping dramatically to 69 in 2017.

Beacom said his union is working hard to meet demand; as well as partnering with BCIT, it has developed training programs to enhance skill levels such as welding, working in confined spaces and aerial (rope) work. He said the union also attempts to bring in individuals with the skills who were never certified so they can challenge for Red Seal certification.

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Sid Returns



Considering the fake muscles and the cape you may be taking this Man of Steel thing a bit too far.

Infrastructure

Saskatoon Traffic Bridge a link between the old and new

PETER CAULFIELD
CORRESPONDENT

Although it is located in the middle of the landlocked prairies, Saskatoon is still the City of Bridges.

The first of the city's eight bridges, the Traffic Bridge, opened in 1907.

Before the Traffic Bridge was built, a ferry and a railway bridge were the only ways to cross the river from Saskatoon to what was then the separate community of Nutana.

The Traffic Bridge, also known as the Victoria Bridge, performed yeoman service to the growing city for more than 100 years. Old age finally caught up with it, however, and it was closed to traffic in 2010.

But you can't keep a good bridge down.

Work on a new Traffic Bridge began at the end of 2015, with completion slated for October 2018.

The story of the old and new Saskatoon Traffic Bridge was recounted at the Canadian Institute of Steel Construction Canadian Steel Conference, which took place Sept. 19-21, 2018 in Halifax, N.S.

David Fritz, director of project solutions of Saskatoon's Supreme Group, which supplied, fabricated and installed the steel for the new bridge, described the project, including the differences and similarities between building a steel bridge early in the 20th century and in the third decade of the 21st century.

"Both bridges are Parker trusses, one of the oldest types of bridge design," said Fritz. "The city decided to copy the original design, in the interest of historical continuity."

The original bridge, which was very narrow, was built for horse and buggy and foot traffic. Tracks for street cars were added in 1922.

The new Traffic Bridge, when it is completed



SUPREME GROUP

The new Saskatoon Traffic Bridge design uses Parker trusses, just like the old bridge it is replacing. The City of Saskatoon chose to copy the original design for historical continuity.

and open to traffic in the fall, will be a four-span arrangement, with reinforced concrete piers in the river.

Although the geometry of the new bridge is similar to the old, it is slightly wider and taller, in order to accommodate wider traffic lanes.

It also features wider pathways for cyclists and pedestrians on both sides, and overhead clearance for emergency vehicles.

The Traffic Bridge will be able to accommodate an average of 11,000 vehicles daily, with the capacity to handle over 20,000 vehicles per day.

Supreme studied the steel from the old Traffic Bridge before it specified the building materials for the new bridge.

"After the old bridge was demolished, Supreme tested its steel," said Fritz. "We found that the steel above the bridge deck was still in good shape, but the steel below deck had suffered from salt corrosion."

To protect it from salt damage, the new bridge is made of conventional weathering steel with a protective coating on steel in the splash zone.

The result will be a two-tone colour between the lower and upper portions of the structure that will remain until a thin surface layer can form on the exposed portions of the weathering steel. Eventually the entire bridge will turn brown.

Fritz says the construction methods used on both bridges are quite similar. "When the original bridge was built, wood shoring was put in place first, then the steel bridge built on top of the shoring, and then the shoring was removed," he said. "A crane moved along the bridge as it was built."

To build the new bridge, Graham Commuter Partners, the general contractor on the project, built a berm in the river and the construction crane operated from it.

The project's location, in the South Saskatchewan River Valley, presented a few challenges, says Fritz.

"The river flows very quickly, and we needed to always keep a sharp eye on the berm, so that it remained strong and intact," said Fritz.

The numerous environmental regulations on the use of the river required experienced administrative navigation.

"For example, we had to be careful not to disturb the fish in the river, especially during the spring spawning season," said Fritz. "We had to stick very closely to our construction schedules and not go beyond them, for the sake of the fish."

In addition, because the river valley holds and magnifies sound, and because people live on both sides of the river, the builders needed to be careful to keep noise to a minimum.

The replacement of the Traffic Bridge is part of Saskatoon's Bridging to Tomorrow Project, which also includes the construction of the Chief Mistawasis Bridge and the extension of Central Avenue and McOrmond Drive.

Like the Traffic Bridge, the Chief Mistawasis Bridge and surrounding road infrastructure are slated for completion in October of 2018. The entire project was executed under a public-private partnership contract for which Graham Commuter Partners was formed.

Canadian construction caught in Trump steel tariff crossfire

PETER CAULFIELD
CORRESPONDENT

The impact of the U.S. government's tariffs on steel imports, announced in March 2018, continues to spread.

The so-called Trump Tariffs placed steel imported from Canada and other foreign at a competitive disadvantage compared to steel produced in the U.S. by making it more expensive.

In a retaliatory move, Canada soon imposed countervailing tariffs on imported U.S. steel, which restricted the supply of steel brought into this country and raised its price.

"The tariffs and counter-tariffs have disrupted the supply of and demand for steel," said Dan Ciuriak, director of Ottawa-based Ciuriak Consulting Inc., which specializes in quantitative trade analysis. "They've really thrown a monkey wrench into the system, upsetting not just product availability, but also production schedules and supply chains. The government is facing pressure from all sides, and it is trying to minimize the cost of the tariffs."

But wait — there's more.

The Canadian government recently announced it is considering the imposition of new trade measures called safeguards that would limit steel imports by way of tariffs and/or quotas.

Canadian primary steel producers say the safeguards are needed to prevent the dumping of foreign steel in Canada,

which would hurt the domestic industry.

But steel fabricators, who manufacture such construction products as rebar, and many of whom rely on a stable supply of foreign steel, say the safeguards are unnecessary.

The Canadian Coalition for Construction Steel (CCCS) which represents users, suppliers, fabricators, service centres, and importers of construction steel, has asked the federal government to reconsider the safeguards.

The CCCS says restricting steel imports would be bad news for the Canadian construction industry.

It could create shortages of steel, negatively affect major building projects and put over 60,000 construction sector jobs at risk.

Fifteen days of consultations about the safeguards ended recently. As of mid-September, the federal government has not announced a decision on the measures.

Anoop Khosla, president of Midvalley Rebar Ltd., a Surrey, B.C. fabricator of rebar, has been biting his fingernails.

"Since the announcement of Canadian countervailing tariffs on U.S. steel there has been no steel coming into Canada from the U.S., and more has been coming from off-shore sources," Khosla said. "The threat of safeguards has been making Canadian rebar manufacturers very nervous, because they could be seriously harmed."

Midvalley has been one of 17 members of CCCS since May 2018, when the group was formed.

Jesse Goldman, an international trade lawyer in the

Toronto office of Borden Ladner Gervais LLP and the legal counsel to CCCS, said in an announcement, "We are confident that when the government has all the evidence, it will conclude that steel production in Canada is not at risk. Even if that changes at some point, there are already ample restrictions for unfairly traded steel."

Goldman said that, while it is important to keep Canada's steel mills in business, "We are certain that, in the broader public interest... the government will make an evidence-based decision that balances the interests of producers and users. No government would put in peril the country's construction sector that is vital to the national economy."

Goldman says the construction industry relies on a stable supply of steel to Canadian fabricators.

"Steel mills in Canada have the capacity to supply only about one-half of domestic demand for construction steel," Goldman said.

"Historically, roughly one-half of the rest has come from the U.S., and the rest from outside North America."

Constraints on the supply of construction steel are particularly serious in British Columbia and Atlantic Canada, due to the high cost of overland transportation from Canadian steel mills, most of which are located in Ontario and Quebec.

About 90 per cent of construction steel used in B.C. comes from the U.S. or Asia; all of Newfoundland's supply is foreign.

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Project

Alpine contractor builds new Whistler pedestrian bridge, platform



AXIS MOUNTAIN TECHNICAL INC.

The Raven's Eye Cliff Walk cantilevered viewing platform extends 12.5 metres out from West Ridge.

PETER KENTER
CORRESPONDENT

Whether they're firing Howitzers as part of an avalanche control team or working at drilling, blasting or construction, B.C.'s Axis Mountain Technical Inc. was born for high altitude contracts. The team was responsible for building the two newest attractions at Whistler Blackcomb—the Cloudraker Skybridge and Raven's Eye Cliff Walk—with a little help from a heavy lift helicopter.

The steel suspension bridge spans 130 metres from Whistler Peak to the

West Ridge, high above the Whistler Bowl. The bridge connects to the Raven's Eye Cliff Walk, a steel cantilevered viewing platform extending 12.5 metres out from West Ridge and offering panoramic views of the location.

Axis had built the Trash Trail Suspension Bridge at Whistler in 2016. It's a smaller wood deck bridge supported by steel infrastructure. The company was later invited to submit a proposal for the new project, a design-build competition for both the suspension bridge and observation deck. Axis headed up the project team as the instal-

lation contractor.

"We brought in Morrison Hershfield as engineers because of their experience on similar bridges, including North Vancouver's Capilano Suspension Bridge," says Ryan Foster, one of the two principals at Axis.

"Extreme weather, extreme temperature swings and extreme loading,"

Ryan Foster
Axis Mountain Technical Inc.

"George Third & Son was our steel fabricator and we also engaged with Duncan Wylie, who's the godfather of geotechnical engineering in our area. Design, fabrication and installation were all provided by BC companies."

The team engaged early on with Whistler Blackcomb to realize the company's vision and overcome

any concerns about the way in which the project might affect skiing operations.

"The suspension bridge had to provide adventure for visitors in the summer, but preserve the pristine conditions of ski runs below during ski season," says Foster.

"To prevent ice and snow from collecting on the bridge and possibly impacting the skier experience,



AXIS MOUNTAIN TECHNICAL INC.

The Cloudraker Skybridge used 95,000 lbs. of steel and has a removable deck as to not impact skiers below during ski season with falling ice and snow.

we designed the deck to be removable."

The design involved a system in which the 101 steel modules that make up the deck could be clipped on to the steel suspension cables during construction, then removed at the beginning of ski season using a crane.

Work on the bridge began in March 2017 on a project site known for its unpredictable environment.

"You have extreme weather, extreme temperature swings and extreme loading with weird dynamic loads caused by snow and sudden icing," says Foster.

"Add that to winds of 200 kilometres per hour through the wind tunnel at the top of the mountain."

Axis workers are certified both by the Society of Professional Rope Access Technicians and the Industrial Rope Access Trade Association, which covers safety, inspection and emergency rescue skills.

The construction site for the bridge was accessible by Axis' off-road boom trucks and trailers which delivered almost 95,000 lbs. of steel to the bridge site, with the assistance of Whistler Black-

comb's in-house crane.

Delivering the steel frame components for the cantilevered portion of the Raven's Eye Cliff Walk was slightly more challenging.

"Our schedule was heavily dependent on the availability of a heavy-lift helicopter to move the steel components from mid-mountain to the job site," says Foster.

"It was probably the most challenging installation feat of the entire project. The structure was made of four beams 12.5 metres long and weighing 4,000 lbs. each, which were delivered by a K-MAX helicopter supplied by HeliQwest Aviation. The ends of the beams wouldn't quite fit together because the extreme winds were pushing the helicopter around and deflecting the connectors out of alignment."

The installation crew improvised by using rigging and winches to pretension the existing connections, compensating for the helicopter's rough ride.

"Once we pre-tensioned, we were able to complete the installation in an afternoon," says Foster.

The soft opening of the bridge occurred on Canada Day 2018, with Raven's Eye completed about a month later.

"Out of all of the places we've worked, there's something special about the geography and view-scape of this location," says Foster.

"It feels like you're on top of the world."

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Community Benefit Agreements will help metal trades: Sigurdson

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Parton said: "We do have a lot of new members in the last eight months, especially in the reinforcing sector which is going great guns. We managed 300 new members in the last six months alone and are looking for more."

The union is now organizing short-term program throughout B.C. for interested new entrants where they can learn the fundamentals of reinforcing. At the end of the program, the individual has the entry level skills to work on a construction site and start

an apprenticeship.

Tom Sigurdson, executive director of the BC Building Trades, said the NDP's Community Benefits Agreements, requiring 25 per cent apprentices on government projects, will help recruits, especially first and second year apprentices, get their work hours.

Roger Geisinger, executive director of the Alberta Metal Building Association, has voiced concerns regarding labour. "It is exclusively in metal building erectors, which is a subsection of the ironworkers," he said.

The issue of labour shortages has been on-going as it is a trade that is "hard to get new people into" since the work can be physically demanding and remote. "It is the type of trade there is a lot of reasons to choose another trade," he said.

Alberta's Apprentices and Industry Training profile show the dwindling numbers as the tally for the total number of erectors (all apprentice years) registered in 2012 was 90 apprentices, which fell to 77 in 2016 and 56 in 2017.