CLR CONNECTOR

MEMBERSHIP NEWSLETTER

JULY 2021 ISSUE

BC CONSTRUCTION EMPLOYERS BUILDING RELATIONSHIPS

CONSTRUCTION LABOUR RELATIONS ASSOCIATION OF BC

IN THIS ISSUE:

WELCOME MESSAGE FROM CLR'S PRESIDENT

The CLR is excited to introduce our new member newsletter which we are calling "CLR Connector". In our survey of members which we conducted early this year and will be doing annually going forward, those of you who responded were very complimentary to the CLR and the important and critical work we do in support of you and your businesses. We are very grateful for the feedback and noted that members asked for even greater communication to keep them up to date on industry issues, trends, priorities and relevant CLR activity. Born from that request was this newsletter and it is our sincere hope that you will find it thought provoking and insightful.

We appreciate that you are very busy, so the structure of the newsletter will be a short introduction to a topic with a link to our website should the topic interest you and you want more information. If at any time you would like to have more information on an issue or have ideas for us to consider for future editions of this newsletter, feel free to reach out to myself or Maria Sushkova in our office. Maria is our Marketing & Communications Coordinator and her contact details are at the bottom of this newsletter. As CLR members, you will be receiving 6 newsletters a year (every 2months) and our goal is to ensure that the content is relevant and timely.

Thank you in advance for taking the time to read the newsletter, and even more importantly for being a valued member of the CLR. Your membership demonstrates not only your commitment to your business and employees, but more broadly to a strong and vibrant unionized construction sector in BC.

On another important note, I wanted to remind our members that with the start of Stage 3 of the province's plan to restart BC under Covid, the CLR is encouraging our members to visit the WSBC website and ensure they have a Communicable Disease Prevention plan in place. We have informed our members about this under our weekly CLR-Info emails, but it never hurts to be reminded.

Thank you again and we hope you enjoy the CLR Connector.

Ken McCormack | President & CEO

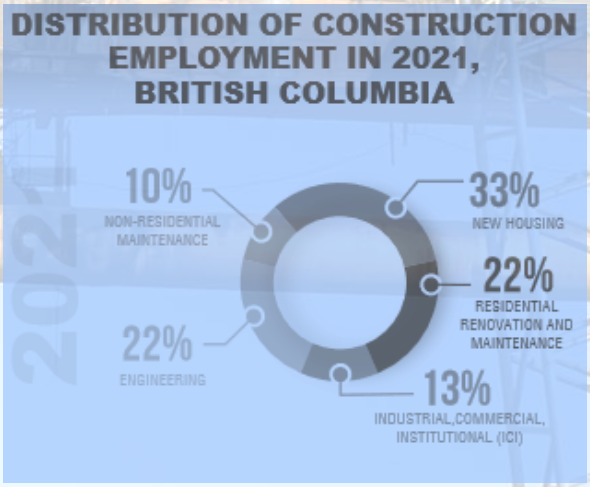
LABOUR MARKET TRENDS

BRITISH COLUMBIA CONSTRUCTION OUTLOOK

British Columbia was among the provinces hit hardest by the impacts of COVID-19 in 2020, recording the first material decline in construction employment in more than a decade. The strong pullback was felt in new housing, and commercial and industrial building construction, which experienced double-digit declines in investment compared to 2019.

The overall losses were only partly offset by rising major project demands, including the LNG Canada facility, Site C dam, the Trans Mountain Pipeline Expansion, and numerous public-transportation projects. The decline follows a period of rapid growth that translated into a 20% increase in construction employment over the four years prior to 2020, which drove down unemployment and led to the emergence of widespread recruiting challenges.

Construction is poised for renewed growth in 2021, as major project demands continue to rise and industrial and commercial investment recovers. Non-residential employment is expected to rise by 11,400 workers to an anticipated peak in 2022. Much of the anticipated growth in construction investment is concentrated in the Lower Mainland region, driven by several major transportation and other major public-infrastructure projects. The pace of residential employment growth is constrained in 2021, driven by continued weakness in new-housing construction, where a modest decline in housing starts is expected, particularly in condo and apartment construction.



The challenges of meeting the ramp-up in major-project requirements have been somewhat lessened by increased mobility potentially from other sectors that weakened in 2020, but mobility may be limited for some trades where specialized skills and experience are needed to meet near-term peak demands. Over the decade, industry growth increases the labour force by more than 18,600 workers – up 10% compared to 2020. Industry must also address the need to replace an aging workforce, with an estimated 41,000 workers, or 22% of the current labour force, expected to retire. Combining retirement and expansion demands, the construction industry will need to recruit close to 59,650 workers over the coming decade. This demand may be partially met by up to 35,150 new entrants under the age of 30 available locally, but a significant portion of remaining demand will need to be drawn from other industries or other provinces.

PROVINCIAL RESIDENTIAL SECTOR Residential construction in the province declined sharply in 2020, as COVID-19 impacted both new-home construction and renovation work. Housing starts fell sharply due to lower demand from reductions in migration to the province and lower investment for condos and apartments. COVID-related mandatory lockdowns and travel restrictions in 2020 reduced population growth and new household formations.

As the economy fully reopens and travel restrictions are reduced, international migration to the province is expected to resume. Renewed population growth translates into a rise in housing starts between 2022 and 2024.

THE AVAILABLE LABOUR FORCE The residential labour force is projected to increase by almost 8,600 additional workers to keep pace with expansion requirements over the decade. The expected retirement of nearly 24,300 workers during this period will increase the overall recruitment requirement to close to 32,800 workers. The addition of an estimated 19,674 new-entrant workers under the age of 30 from local recruitment efforts will help to moderate labour force pressures, but unless recruitment is increased, a cumulative deficit of 13,166 workers is expected to emerge over the scenario period.

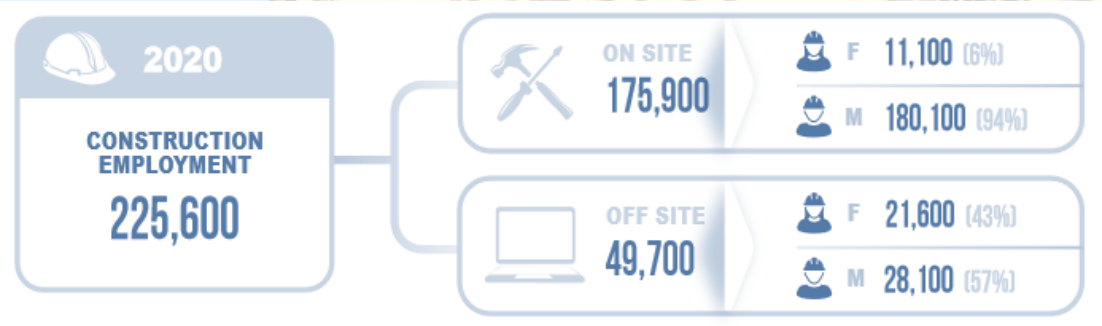
Source: BuildForce Canada

PROVINCIAL NON-RESIDENTIAL SECTOR British Columbia is entering the steepest period of an expansion that has been building over the past five years. Major-project demands are expected to intensify in 2021 and rise to a peak in 2022. These projects include ongoing work at Site C, LNG Canada's export terminal and related TC Energy Coastal GasLink pipeline, the Trans Mountain Pipeline Expansion, Pattullo Bridge Replacement, and transit, education, health care, and other infrastructure projects. Investment in ICI (industrial, commercial, institutional) building construction declined in 2020, but is expected to post strong growth between 2021 and 2022 with the stacking of several major health care and education infrastructure projects, as well as spin-off work related to major engineering projects. Investment remains elevated over the mid-2020s supported by growth in commercial building construction, and continues to rise after 2025, as population growth drives demand for commercial and institutional buildings, while a weaker Canadian dollar is anticipated to drive

manufacturing and primary-sector growth. Over the long term, continued growth of the province's population supports increased spending on utilities, transportation, and road infrastructure, contributing to gains in engineering investment between 2027 and 2030.

UNDERREPRESENTED GROUPS OF WORKERS Building a sustainable and diverse workforce will require the construction and maintenance industry to increase recruitment from groups traditionally underrepresented in the current construction labour force, including women, Indigenous people, and new Canadians.

In 2020, there were approximately 32,700 women employed in British Columbia's construction industry, of which 34% worked on site, directly on construction projects, while the remaining 66% worked off site, primarily in administrative and management-related occupations. Of the 175,900 tradespeople employed in the industry, women made up 6%. The top five trades and occupations in which women tend to be employed are trades helpers and labourers (22% of all tradeswomen), construction managers (17%), painters (12%), contractors and supervisors (9%), and carpenters (7%).



Source: BuildForce Canada calculations based on Statistics Canada's Labour Force Survey (LFS) and 2016 Census of the Population.

The Indigenous population is another underrepresented group that presents recruitment opportunities for British Columbia's construction industry. In 2020, Indigenous people accounted for approximately 5% of B.C.'s total working-age population. The Indigenous population is the fastest growing in Canada and has a higher propensity to choose the construction industry as a potential career choice. Based on the 2016 Census, an estimated 7.6% of non-Indigenous Canadians were employed in the construction industry, compared to 9.6% for the Indigenous population. The Indigenous population is also more likely to work in heavy-industrial construction, as approximately 30% of Indigenous people working in construction work in the sector, compared to 20% of non-Indigenous workers.

B.C.'s construction industry may also leverage new Canadians (immigrants) over the coming decade to meet labour requirements. The province is expected to welcome an average of 69,000 new international migrants annually between 2021 and 2030, making the immigrant population a key source of labour force growth. British Columbia's construction workforce is

made up of approximately 24% new Canadians. Historically, a key source of immigrants to the province were Europeans, who tend to have a higher propensity to choose the construction industry. Currently underway, however, is a shift that has seen a significant rise in immigration from Asia (China and India), whose citizens may have a lower tendency to consider employment in the construction sector. Due to Canadian immigration policies and selection criteria, persuading individuals upon arrival to consider careers in the trades may be challenging, particularly for those with professional training outside the skilled trades that are seeking employment in other sectors of the economy. As immigrants will make up an increasing share of the overall Canadian population over the next few decades, additional recruitment efforts will be required to ensure the construction industry continues to recruit its share of new Canadians into the labour force.

To view the full report, visit.

COVID-19 HITS CANADIAN APPRENTICESHIP POOL HARD: CAF REPORT

According to a recent report by the Canadian Apprenticeship Forum (CAF), apprenticeship registrations in Canada's construction industry have declined significantly due to COVID-19, while many journeypersons are set to retire, which combined could lead to a shortage of some trades.

The report indicates the pandemic has taken its toll on the apprenticeship system, heightening the risk that there may not be enough certified journeypersons in some building trades four or five years from now.

Trades such as bricklayers, boilermakers and welders are not training enough apprentices to meet the demand nationally. The report, titled Apprentice Demand in Red Seal Trades: A 2021 National Labour Market Information Report, was done by Prism Economics and Analysis. It draws together the latest apprenticeship trends and projections to provide a forward-looking assessment of demand and supply for trade certification.

While the industry will need 1,947 individuals to obtain bricklayer certification in the five-year period from 2021 to 2025, the number of projected completions is 1,143. For boilermakers, 1,847 are needed but only 766 completions are expected, while 10,032 welders need to be certified but just 5,868 are expected.

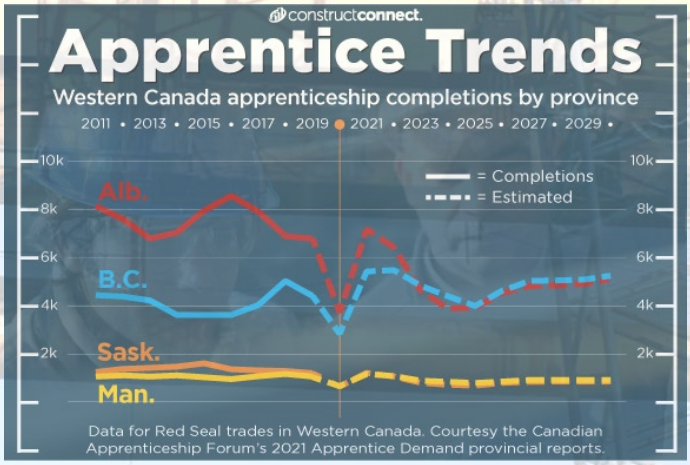
Preliminary results from Statistics Canada indicate that overall apprenticeship registrations across Canada dropped 43% in 2020 and certifications declined by nearly 49%.

According to the report, the COVID-19 pandemic has presented unprecedented challenges to Canada's apprenticeship system, as mandated shutdowns and social distancing measures created new administrative challenges and imposed many obstacles to the delivery of in-school training, testing and certification.

Although new registrations and certifications are expected to rebound in 2021, the report noted the impact of COVID-19 has been significant and is likely to increase the supply risk for new certified workers over several years.

Over the next five years, the report suggests Canada will need 163,785 new journeypersons to sustain workforce certification levels across 56 Red Seal trades in Canada. To keep pace with the requirements, more than 375,026 apprentices will be needed and 195,800 of them will be required for the top 15 Red Seal trades.

Moving forward, the report notes the economic and employment growth outlook suggests that between 2021 and 2025, new registrations in Red Seal programs will see a recovery in 2021 with continued growth thereafter in line with employment growth, rising from 59,800 to 63,800 new registrations per year.



To view the full report, visit.

INSIDE INNOVATION

CONSTRUCTION IN A DIGITAL WORLD: A DEEP DIVE INTO TECHNOLOGICAL ADOPTION IN CANADA'S CONSTRUCTION INDUSTRY

A new report, Construction in a digital world, by the Canadian Construction Association (CCA) and KPMG in Canada, identifies significant opportunity for Canadian construction firms to adopt innovation.

As many as 75% of construction firms surveyed by KPMG and CCA rated their digital maturity as fairly low relative to their competitors, the report finds. Almost three in five admit their organization "needs to moderately or considerably" adapt their digital strategy, with most unsure about which technologies and applications would offer them a competitive advantage.

"The industry is on the cusp of digital transformation with leading firms already adopting technology – from analytics to drones, robotics, 3D printing, and augmented reality – to yield improved productivity, safety and decision-making," says CCA president Mary Van Buren. "Our survey reveals, however, that smaller and medium-sized firms are not yet capitalizing on the benefits technology can bring. For many contractors, the low bid model simply does not allow for innovation or to invest in new technologies."

While some firms have invested in digitizing their front and back-office operations to reduce redundancy, cost and improve the employee and customer experience, the report suggests there is even greater opportunity to be gained from embracing technologies, such as predictive analytics, building information modelling (BIM), digital twins, wireless monitoring and autonomous equipment, and augmented reality (AR).

Construction companies embracing digital transformation will achieve greater efficiency, generate substantial productivity gains, improve onsite safety for workers, reduce the cost of goods sold, and modernize operating models, the report says.

To view the full report, visit.

DIGITAL TWINS IN CONSTRUCTION

Digital twins promise to be one of the key forces of innovation in the construction industry. This technology creates a digital representation of real-world systems and components and is important for an industry seen as slow to adopt digital technology relative to others.

"There are more than 4 billion buildings in the world today, which is twice as many as websites are online," said RJ Pittman, CEO of Matterport, a reality capture service for buildings. The rush is on, not only to build more efficiently, but also to increase the value of existing buildings, which today represent a $230 trillion asset class.

Construction-related spending accounts for about 14% of the world GDP and is expected to grow from $10 trillion in 2017 to $14 trillion in 2025, according to McKinsey. The consulting firm also says that about $1.6 trillion in additional value could be created through higher productivity. McKinsey identified seven best practices that could use digital twins to boost productivity by 50 to 60%:

1. **Reshape regulation** – accelerate approvals with testable plans and enable the adoption of performance-based requirements.
2. **Rewire contracts** – improved information sharing enables new contractual models.
3. **Rethink design** – new designs could be tested and iterated more efficiently.
4. **Improve onsite execution** – easier detection of scheduling clashes.
5. **Infuse technology and innovation** – improved orchestration with IoT, drones, and AI planning.
6. **Reskill workers** – facilitate new training programs for innovative technologies using VR.
7. **Improve procurement and supply chain** – better harmonization between current progress and deliveries.

"Digital twins are about connecting to real-life objects or information," said Connor Christian, senior product manager at Procore, a construction software provider. That is a key issue in an area that combines so many different engineering facets.

At the same time, the construction industry has evolved a somewhat fragmental approach to managing different data sources, including GIS for location data, building information modeling (BIM) for 3D data, and virtual design and construction (VDC) for project management. This challenges digital twin implementation.

The industry's attempts at transformation are complicated, and a lot of subsidiary elements need to successfully evolve in order for digital twins to gain traction. For one thing, the industry needs better data quality and context. The data comes from many different sources

in different formats, which can be challenging for analysis. In addition, the industry will also have to find consensus on what defines digital twins and how they plug into existing processes. "There is still a general lack of understanding of what a digital twin is," said Procore's Christian. Right now, any virtual object associated with data is being called a digital twin, he suggested.

While any job site with sensors or cameras has the potential to create digital twins that allow for access, control, and reporting from those devices, the fact is that not all data is good data, so there must be standards, processes, and verifications in place to help filter out unnecessary data, Christian said. To read more, visit.

PROVINCE ADVANCES LOW-CARBON BUILDING TECHNOLOGIES IN B.C.

British Columbian homes and workplaces will benefit from more made-in-B.C. solutions aimed at reducing building energy costs and pollution.

The CleanBC Building Innovation (CBBI) Fund is supporting 21 state-of-the-art projects that demonstrate innovative low-carbon, energy-efficient building practices and technologies.

The CBBI Fund provides financial support for building projects and programs that accelerate the availability and affordability of low-carbon building solutions. This includes advanced building designs like Passive Houses, new construction methods like the use of low-embodied-carbon mass timber and ultra-efficient building components like heat and energy recovery ventilators. The second intake of the CBBI Fund received $8 million from the Province's StrongerBC Economic Recovery Plan, launched in September 2020.

Approved CBBI Fund projects fall into one of four streams:

- The material, component and system manufacturing stream supports investment in manufacturing facilities to diversify and expand existing product lines or commercialize new product lines.
- The digital technology solutions stream supports technology development for new or improved digital solutions.
- The demonstration projects stream helps to offset the incremental capital or operational costs of projects that demonstrate novel technologies or applications relative to industry standards.
- The open call for innovations stream supports other types of activities not covered by the other funding streams, such as product development, testing and certification.

Depending on the stream, projects could receive up to a maximum of $1 million. Read more.

DIGITIZATION DURING PANDEMIC CREATES OPPORTUNITY FOR TECHNICAL SAFETY BC

Technical Safety BC, the independent, self-funded organization that oversees the safe installation and operation of technical systems and equipment in B.C., has released its latest state of safety report. The report for 2020 outlined the work and findings of the group that had to quickly adapt the unprecedented pandemic challenges.

"We had to look at our operations and see how things were going to work," said Catherine Roome, the group's lead executive officer. "We went to 100% remote assessments, so clients didn't have to have the extra bodies onsite. This meant we had to ask them to do some extra work which wasn't always welcomed but in the end we arrived at a good balance."

Digitization during COVID

Now that the pandemic has begun to decline in the province, the group intends to keep doing remote assessments 25 to 50% of the time.

The report shows that during the COVID-19 pandemic, Technical Safety BC was able to increase their presence in the safety system in 2020, conducting over 45,000 assessments, with 20,300 of them being conducted remotely. This is versus 40,000 safety assessments conducted in a typical year.

This was possible thanks to the organization's use of data, analytics and artificial intelligence (AI).

The thousands of photos of inspections could be fed into the group's artificial intelligence system to help it better recognize problematic scenarios. The data could also be used to help teach.

Roome said the pandemic also allowed the group's proprietary predictive algorithm to work more closely in tandem with inspectors. She said algorithms will never replace having a set of human eyes on something, but it does help significantly reduce the group's environmental footprint and help augment the inspection process.

The system gives inspectors its assessment of if it thinks a site will have hazards and how serious it thinks those hazards might be. In the past few years, the AI system has increased its learning by 200%.

According to the report, in 2020, there was a 3.49% decrease in injuries compared to 2019 and a 9.5% decrease in the number of incidents reported. Read more.

UBC RENEWABLE ENERGY HUB FUELS B.C.'S LOW-CARBON FUTURE

With support from the Province, the University of British Columbia (UBC) is about to break ground on a project that will transform a city-sized block of campus into a world-leading smart energy district to test how hydrogen can be used to power a low-carbon future.

The project will include a solar panel system that harnesses the sun's energy to charge electric vehicles. That same solar power provides energy to a water electrolyzer that produces "green" hydrogen. The hydrogen is then sent to a hydrogen vehicle refueling station to service light- and heavy-duty fuel cell vehicles.

This technology will also make it possible to explore other hydrogen applications, such as injection into the natural gas grid to decarbonize space heating.

The Province has awarded B.C. Low Carbon Fuel Standard (LCFS) credits with a current market value of approximately $5.6 million to UBC for the Renewable Energy Hub. The LCFS supports the production and use of renewable fuels, reducing greenhouse gas emissions and stimulating investment, training and jobs in clean technology. Under the LCFS, the Province can award compliance credits to fuel suppliers for actions that increase the use of low-carbon fuels like hydrogen and electricity, renewable gas or diesel.

Learn More:

Read more about UBC's Renewable Energy Hub here:
https://news.ubc.ca/2021/05/05/ubc-breaks-ground-on-23-million-renewable-energy-hub/
(can01.safelinks.protection.outlook.com)

To learn more about the Low Carbon Fuel Standard: http://gov.bc.ca/lowcarbonfuels

The Government of Canada's Hydrogen Strategy can be found here:
https://www.nrcan.gc.ca/climate-change/the-hydrogen-strategy/23080

BUILDING INNOVATION: INNOVATIVE AFFORDABLE HOUSING PILOT PROJECT COMING TO VANCOUVER

An affordable rental housing pilot project is underway in Vancouver that will help BC Housing evaluate innovative building materials and designs aimed at tackling affordability, inclusion and climate change.

The project, called Vienna House, is in the initial design phase. It will be proposed as a six-storey building with approximately 100 units at the intersection of Victoria Drive and Stainsbury Avenue in East Vancouver. The project is a partnership between BC Housing, the City of Vancouver, and More Than a Roof Housing Society.

Vienna House will showcase innovative materials and processes designed to deliver high-energy performance with very low greenhouse gas emissions. This includes exploring prefabricated building components made from renewable materials and an integrated design process that brings all partners together at regular intervals to solve project challenges and maximize opportunities for efficiency.

The Vancouver Affordable Housing Agency and Vancouver's Public: Architecture + Communication are creating the initial design concept for Vienna House and moving it through the rezoning process. If approved, the project would be built to meet the requirements of the Passive House standard. As a result, future tenants would use very little energy for heating and cooling and, in compliance with the City of Vancouver's Zero Emissions Building Plan, the building would be designed to minimize climate pollution.

The Urban Innovation Research Group at the University of British Columbia's (UBC) Sustainability Initiative would study Vienna House in depth, from start to finish, to ensure the project creates a wealth of evidence to inform construction best practices and policy development.

The Vienna House project is also the signature piece of a collaboration between the City of Vancouver and the City of Vienna, Austria, to explore new materials and approaches to building affordable housing. A similar project, called Vancouver House, will be built in Austria while Vienna House is underway.

For regular updates on the project, visit the project's dedicated website at: www.viennahouse.ca.

WORKPLACE SAFETY

NEW HARD HAT RULES FOR THE WORKPLACES

Starting on Sept. 1, 2021, employers will be required to review each area of a job site when determining if a person must wear safety headgear, such as a hard hat, in that area. Employers will determine, through a risk assessment, what safety precautions could be taken to prevent head injuries and whether a hard hat is necessary.

This regulatory change provides tools for employers to accommodate workers who wear head coverings, such as a turban, as a religious practice. B.C. Minister of Labour, Harry Bains initiated a request in 2019 asking WorkSafeBC to review safety headgear regulations and consider changes to make them more inclusive. WorkSafeBC held public and stakeholder consultations in 2020 and early 2021. Employers, industry associations, workers, unions and community leaders shared their perspectives on the proposed changes, which were considered as part of the decision. On April 27, 2021, the WorkSafeBC board of directors approved a regulatory change to Part 8 of the Occupational Health and Safety Regulation dealing with safety headgear.

After the changes take effect on Sept. 1, 2021, WorkSafeBC will continue to conduct inspections in the industries with the highest risk of serious injuries. To ensure employers are aware of and understand the changes to the regulation, WorkSafeBC will send information to employers prior to the regulations coming into effect. The information will include information on each of the regulatory changes, which will include links to the revisions and any appropriate guidelines.

Learn More:

WorkSafeBC's Occupational Health and Safety Regulation amendment:
https://www.worksafebc.com/en/resources/law-policy/discussion-papers/bod-approves-2020-amendments-ohsr-apr21/part-8-safety-headgear