

MODULAR BUILDING INSTITUTE

2020 CANADIAN

COMMERCIAL MODULAR CONSTRUCTION ANNUAL REPORT



About the Modular Building Institute – The Voice of Commercial Modular Construction

The Modular Building Institute (MBI) is the international nonprofit trade association serving the commercial modular construction industry for over 35 years.

As the Voice of Commercial Modular Construction™ MBI promotes the advantages of modular construction while advocating for the removal of barriers that limit growth opportunities.

Through its long-standing relationships with member companies, policy makers, developers, architects, and contractors, MBI has become the trusted source of information for the commercial modular construction industry.

Overview of Modular Construction Industry

The modular construction industry is primarily regulated at the state and local levels by building code administrators and authorities having jurisdictions. As with site-built structures, a building constructed using the modular process must meet the local codes where the building will be placed. Unlike federal manufactured housing products, built in accordance with the Housing and Urban Development (HUD) standard, there is no specific “modular building code” or exceptions for a building constructed utilizing the modular construction process. It is simply a more efficient process to construct building components at an offsite facility, and then transport and assemble components of a building at the final building site.

Modular construction can be utilized for residential, commercial, or industrial applications. MBI represents the commercial sector of the industry.

Commercial Modular Buildings are nonresidential factory-built building components and structures designed to meet all applicable building codes. Commonly, these buildings are constructed in accordance with the International Building

Code (IBC) in the United States, the National Building Code (NBC) in Canada, or a local version modeled after these codes. In this context, prefabricated mechanical, electrical, or plumbing (MEP) systems are not included for industry revenue and production figures.

The commercial modular building industry is comprised of two distinct divisions, both represented by MBI.

Relocatable Buildings (RB) – Relocatable buildings, as defined in the International Building Code, are partially or completely assembled buildings constructed and designed to be reused multiple times and transported to different building sites. This segment of the industry maintains fleets of relocatable buildings offered for sale or lease to customers.

Permanent Modular Construction (PMC) – PMC buildings are subject to the same building codes and requirements as site-built structures, depreciate in much the same manner, and are classified as real property. This segment of the industry provides construction-related services for the successful design, manufacturing, delivery, installation and finish-out of commercial and multi-family buildings.

PMC is an innovative, sustainable construction delivery method utilizing off-site, lean manufacturing techniques to prefabricate single or multi-story whole building solutions in deliverable volumetric module sections. PMC buildings are manufactured in a safe, controlled setting and can be constructed of wood, steel, or concrete. PMC modules can be integrated into site-built projects or stand alone as a turnkey solution, and can be delivered with MEP, fixtures, and interior finishes in less time, with less waste, and higher quality control compared to projects utilizing only traditional site construction.

This annual report features images of award-winning buildings from the Modular Building Institute’s 2020 Awards of Distinction. Learn more about the Awards and our winners at modular.org.





Oakville Modular Library.
Built by PCL Agile.

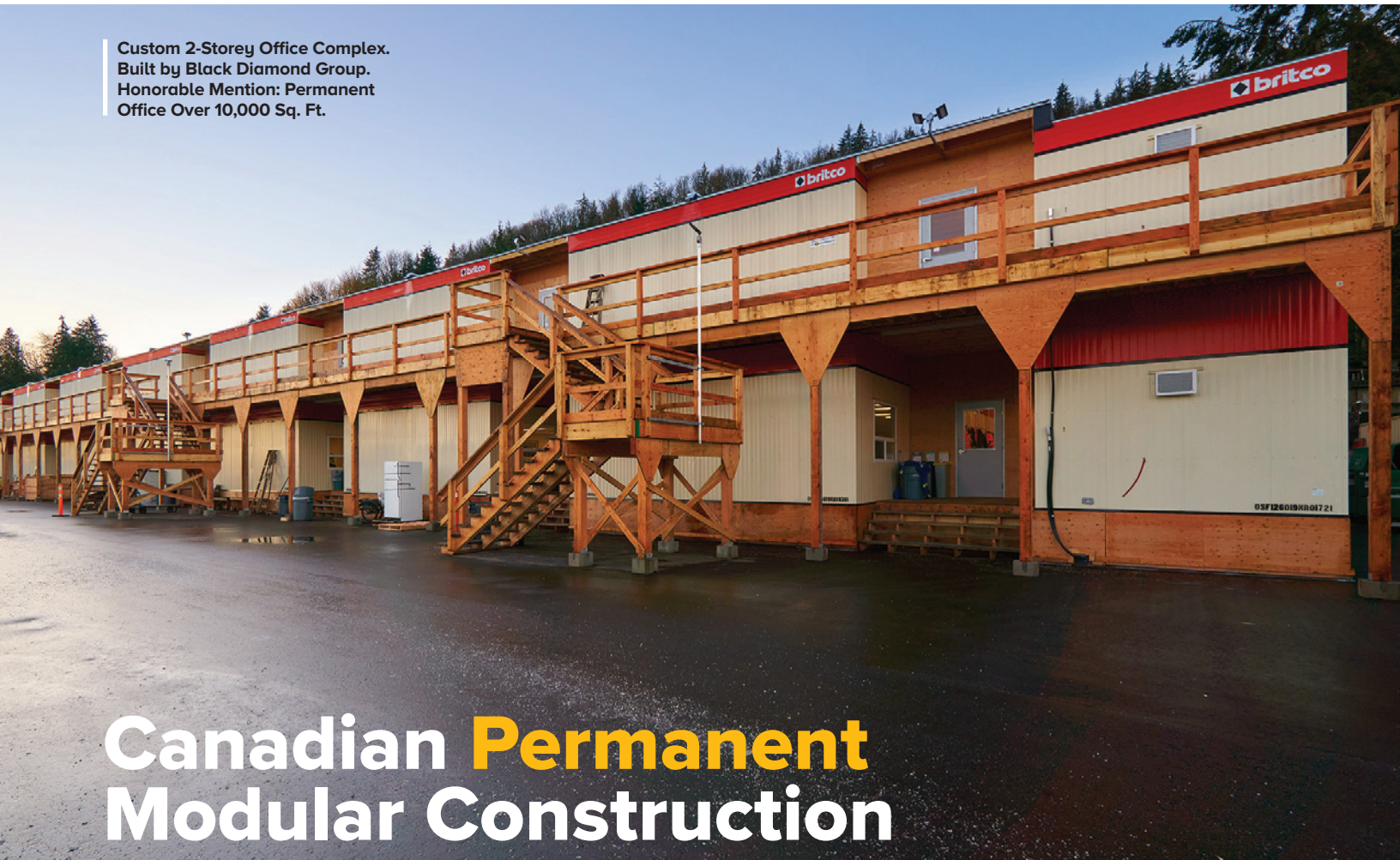
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Cover:
Nihtat Corporation Office. Built by Horizon North Logistics, Inc.
Honorable Mention: Permanent Office Under 10,000 Sq. Ft.

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Custom 2-Storey Office Complex.
Built by Black Diamond Group.
Honorable Mention: Permanent
Office Over 10,000 Sq. Ft.



Canadian **Permanent** Modular Construction

OVERVIEW

MBI represents 60 companies based in Canada, including 26 manufacturers of modular structures. MBI estimates that there are about a total of 45 modular manufacturers in Canada fabricating for a variety of markets including residential, multi-family, commercial, educational, and industrial sectors. There are also an estimated 15 or so smaller fabrication warehouses doing renovations and modifications for various markets.



MBI represents 63 companies based in Canada, including 26 manufacturers of modular structures. In all, MBI estimates that there are about 50 total modular manufacturers in Canada fabricating for a variety of markets including residential, multi-family, commercial, educational, and industrial sectors. MBI directly obtained revenue data from 11 Canadian manufacturers.

SEDAR (www.sedar.com) is the official site that provides access to most public securities documents and information filed by issuers with the 13 provincial and territorial securities regulatory authorities (“Canadian Securities Administrators” or “CSA”) in the SEDAR filing system. MBI also obtained relevant information from annual filings on the following companies: ATCO Ltd. was incorporated under the laws of the province of Alberta and is listed on the Toronto Stock Exchange. Horizon North Logistics Inc. is a corporation registered and domiciled in Canada and is a publicly-traded corporation, listed on the Toronto Stock Exchange under the symbol HNL.

On average, manufacturers in Canada generated approximately \$13,004,545 CAD in revenue in 2019, up from

\$11,012,676 in 2018. The industry accounted for \$1.064 billion CAD in construction activity, up from \$901 million in 2018. Overall non-residential construction put in place for key modular markets increased to \$27 billion CAD in 2019, up from approximately \$25 billion in 2018. This excludes single-family residential and engineering (bridges, highways, infrastructure).

Across Canada, overall increases in key markets were driven by increases in new education starts (up 11.5 percent), office construction nearly doubling, and new

multifamily starts (up 13.6 percent). New multi-family projects made up over half of all new construction opportunities in these key markets.

Historically, one of the key markets for the modular industry in Canada has been the industrial workforce housing sector. The modular industry provided temporary workforce housing solutions in remote regions where the energy sector was active. With the decline in oil prices in recent years, the industry has diversified into some of the above-mentioned markets more aggressively.



Chilliwack Transitional Housing. Built by Metric Modular. Honorable Mention: Green Building.



Western CANADA

**Cole Starnes Abbotsford
Temporary Housing Facility.
Built by Metric Modular.
First Place: Relocatable
Modular Multifamily.**

(British Columbia, Alberta, Saskatchewan)

Overall construction starts in this region rebounded to nearly \$10 billion CAD in construction activity after falling off in 2018. Gains were driven by increasing in multifamily projects (up 34 percent from 2018), education (up 23 percent), and office/administrative spaces (up 57 percent).

Like other regions, the multi-family market is the biggest opportunity for the industry, with nearly \$5.5 billion CAD in projects in 2019, representing over half of the construction opportunities in key modular markets. British Columbia saw an increase of nearly 22 percent in the multi-family

market to \$4.1 billion CAD in 2019, while Alberta all but doubled from \$662 million CAD to \$1.3 billion.

The education sector exceeded expectations and surpassed \$1.6 billion CAD in this region. The growth in the education market came mainly from British Columbia, nearly doubling from \$465 million CAD to \$851 million in 2019.

Government-funded projects largely drove the market in Saskatchewan with a majority of construction projects falling into education, government office, or fire and police stations.



CASE STUDY:**Hostelling International Jasper**

Company: **Horizon North Logistics Inc.**

Location: **Jasper, Alberta**

Gross Size of Project: **25000 Square Feet**

Days to complete: **291**

Built in Jasper, Alberta, this project includes a hostel, two staff accommodation buildings and a maintenance facility. The three-story main hostel lodge accommodates 157 guests over a mix of room types, including private hotel-style rooms and shared hostel-style rooms for groups and families. It includes amenities such as a fireplace lounge, media room, game room, sauna, and an on-site café and kitchen. Staff accommodations include a staff quarters with sleeping rooms, shared bathrooms and living areas for up to 12 people, and a manager's quarters with apartments for a manager with family and an assistant manager.

The inspiration for the building's exterior comes from the surrounding mountain ranges, with varied shades of gray on the outer walls. The overall exterior has a rustic feel with wood and stone that suits the natural environment of the national park where the project is located. The site also includes a large outdoor space for multipurpose use.

Technical Innovation & Sustainability

Through the building process, sustainability was a major consideration because of the project's location in a national park. Construction was intended to be as minimally disruptive to the site and surrounding environment as possible. Modular construction ensured that there was minimal waste, noise, and site disruption, with most of the work being done offsite. This project used low emitting materials, paints and finishes to limit any contamination to both the indoor and outdoor air. It also involved the use of materials with high recycled content to reduce the overall building footprint, and low flow water fixtures that will ensure efficient water use



in the long term. Being located in the Rocky Mountains, where low temperatures are to be expected, energy and thermal efficiency was



also an essential consideration. The building includes a heat recovery ventilation system, triple glazed windows, and extensive insulation in the walls.

Cost Effectiveness

The ultimate value of this project was its ability to meet the two most pressing needs – timeline certainty and a sustainable approach. The choice of modular construction proved to be most effective for the owner, with modular's built-in efficiencies able to ensure a timeline of 10 months from start to finish and protect the national park environment, without additional costs when compared to site-built construction. Several of the project's components focused on energy and cold weather efficiency will also create long-term value for the project and reduce lifecycle costs. Those components include LED fixtures, a high-efficiency heat recovery ventilation system, triple glazed windows, and low flow water fixtures.



Eastern CANADA

UPS Office.
Built by Kent Homes,
a division of J.D. Irving, Ltd.
Honorable Mention:
Permanent Modular Retail.

(Atlantic Provinces, Ontario, Quebec, Manitoba)

Overall construction activity in the eastern provinces jumped 21.5 percent in 2019, to \$26.4 billion CAD in key modular markets. The biggest gains by market included government offices (up 164 percent from 2018), general office/administrative space (up 103 percent), and retail (up 215 percent). It is somewhat surprising that the growth did not come from many of the traditionally strong modular markets such as education and multi-family.

Nonetheless, the multi-family sector held its own and grew slightly to \$11.9 billion CAD in the region. Multi-family projects accounted for 51.4 percent of all new projects in key modular markets in 2018 but dropped to 44 percent in

2019. Ontario is still the biggest driver for multi-family projects in the region, accounting for \$8.5 billion CAD in 2019.

Education was still a strong market in the region, particularly in Quebec, with over \$1.6 billion in activity in 2019. Ontario dropped off in this market in 2019, after investing \$1.2 billion in 2018.

The retail market boom in Quebec was the single largest gain of any market in any Province, going from \$327 million CAD in 2018, to \$1.7 billion in 2019. Overall, Ontario accounted for \$15.4 billion CAD of all construction activity in the region, or 58.2 percent of the total. Quebec accounted for \$8.6 billion CAD or 32.6 percent.



CASE STUDY**Beausejour Family Crisis Resource Centre**

Company: Kent Homes, a division of J.D. Irving, Ltd.

Location: Shediac, New Brunswick

Gross Size of Project: 23760 Square Feet

Days to complete: 319

The Beausejour Family Crisis Resource Centre had been aggressively fundraising for over three years to build their vision: a safe haven for victims of domestic abuse within the South Eastern region of New Brunswick. A space that would support families from first contact, emergency response, through to independent living and safety.

This two-story center, complete with a full basement, would include office space for their support staff, emergency housing, transitional housing, and long-term housing. It would house victim support services for counselling, a secure police interview room, and house their family support canine. This space would include supervised family visitation rooms—the first of its kind in New Brunswick—as well as a clothing swap space and more. This large complex would create a community of safety and support. The 18 modules of varied size are configured in a single story, two story mix on a full basement. The space is divided between a services side and residential side.

Technical Innovation & Sustainability

All modules were built offsite. Box configurations were designed to allow the installation of cabinetry and complete washrooms in the factory as much as possible. We built and set all the modules in a location close to the site so we could do all the installation in one go. The restricted site meant using the largest crane to safely handle long reaches with modules. A lot of planning resulted in a slick three-day installation for a large two-story configuration. After the installation, roof truss installation and site finishes started as soon as weather allowed. We fully wrapped the boxes to minimize site damage due to winter



conditions. This project included a number of material donations from supporters. This extra coordination was tricky at times to ensure the amount of



materials donated would be used to best efficiency and determining what would be factory installed or site installed but it kept the project costs down and supported the center for a win-win solution.

Cost Effectiveness

The main benefit for this customer was a hands-off approach. The team behind this project were counselors, support workers, and crisis management teams who had more important work to do than act as project managers. They needed a solution they didn't have to babysit, and they needed a fixed price; both were items Kent Homes could offer. They also wanted to start the project as soon as the announcement of funding allowed which meant building through a New Brunswick winter. This is where modular certainly provided an advantage. The team also provided a full building control system. This allowed the client to manage the building systems across multiple units to help keep their operating costs manageable for future sustainability.

Suncor Convenience
Store. Built by NRB, Inc.
First Place: Permanent
Modular Retail.



Canadian Relocatable Building Market

OVERVIEW

The Modular Building Institute (MBI) represents 63 companies in Canada including the 26 modular manufacturers in approximately 50 manufacturing locations across Canada. These companies account for approximately 80 percent of the entire modular industry activity in Canada.



**SPSG Camp Fire Lodge.
Built by Black Diamond Group.
First Place: Best Relocatable
Modular Workforce Housing.**

The modular construction industry is perhaps better suited than any other industry to help Canada address its facility needs, regardless of market. The industry has thousands of buildings in available inventory that can be quickly deployed and utilized for a variety of needs including housing, office space, and healthcare.

The industry also has the capacity to build and deliver millions of square feet of newly constructed, code compliant buildings for any market. Collectively, the industry factories have the capacity to build 750,000 – 1,000,000 square feet of building space monthly.

MBI obtained revenue data on eight Canadian companies engaged in the relocatable buildings market totaling \$211,939,808 for an average revenue of \$26,492,385. The median revenue from this group was \$2,915,500 indicating a wide disparity in the sample group among small and large companies.

These companies collectively own 16,428 units in Canada, with 10,035 on lease as of December 31, 2019. This 61.1 percent



**LJM Developments -
Sales Pavilion.
Built by NRB, Inc.
Honorable Mention:
Relocatable
Modular Retail.**

utilization rate was a slight increase from 60.6 percent for the prior year.

In Canada, a majority of industry-owned RBs are controlled by a handful of large, multi-national corporations with diverse revenue streams. It is not uncommon for a Canadian company to generate revenue from the manufacturing of modular units, from hospitality-related services attributed to workforce housing accommodations (i.e. facility service and catering), and from construction projects such as multifamily



Stackt Public Washroom.
 Built by Corner Cast
 Construction Inc.
 Honorable Mention:
 Relocatable Modular
 Single-Wide.

housing developments. To the greatest extent possible, MBI separated and did not include revenue from construction projects nor facility services for purposes of this report. This data focuses on the leasing and sales revenue of relocatable buildings and equipment.

The Canadian relocatable building (RB) market is different than the U.S. market in many respects. Key Canadian RB market characteristics:

- RB inventory concentrated in a smaller number of multi-national corporations.
- Corporations have more diverse revenue streams.
- Historically, oil, gas, and mining industries drove demand for RBs.
- Industry continues diversifying into new markets.

The demand for equipment rentals and workspace solutions largely depend upon the level of industry activity for oil and natural gas and mineral exploration and development and infrastructure development. The fluctuation in oil prices causes uncertainty in the short term leading to a reduction in the need for worker accommodations.



CASE STUDY**Enfant-du-Monde School for Montreal School Board**

Company: **RG Solutions**

Location: **Montreal, Quebec**

Gross Size of Project: **8150 Square Feet**

Days to complete: **61**

This two-story complex with six classrooms is one of a total of 54 classrooms built and installed for the Montreal school boards. On the first story there are three elementary school classrooms (24'x22'), restrooms for boys, restrooms for girls, and stairs to get to second floor. The second story is similar with three additional classrooms (24'x22'), a lounge and restrooms for teachers, and stairs to get back to the first floor.

The interior design is in accordance with school board and architects request, with painted gypsum with molding, large windows, school-grade doors and hardware, high performing soundproof walls, and a low ITS HVAC system. The exterior of this temporary building—steel siding with painted fiber cement board inserts—was designed to be harmonious with the exterior appearance of the permanent school. The fiber cement board inserts facing the street were painted by a local artist. The modules themselves were installed on screw piles.

Technical Innovation & Sustainability

Since no openings were done on the North side of the building, curtain walls were designed and built in the factory in order to respect the city rule requiring a specific percentage of windows facing the street. Architects representing the client—who knew very little about modular—were afraid that the sound would be easily transmitted between floors given the wood structure. The modular approach, including a suspended ceiling with acoustic tiles and acoustically strong insulation wool, has proven that the ITS factor between floors is extremely efficient. Stairs made of steel were



installed in two pieces in the lower module at the factory. Following the installation of the upper module, the second piece of stairs was raised and fixed. The building's exterior design was done so it does not look like a building with boxes with joint.



The exterior siding was done in the factory in a way that it could easily be installed and dismantled at the job site. All in all, a tremendous amount of time was saved on-site.

Cost Effectiveness

All classrooms and stairwells modules are identical, resulting in an efficient and productive factory approach. The RG Solution team performed the installation of the classrooms, which allowed for a simple and effective coordination and a better control of the costs. The design and installation of the piles were also under the supervision of RG Solution, which ensured an integrated approach between fabrication, delivery, and site installation.

CURRENT MARKETS

Today, customers of relocatable buildings include a diversified client base of general contractors, real estate developers, manufacturers, commercial businesses, education providers, financial institutions, government agencies, and companies involved in the resource industry. Common product offerings include “single wide” office units, storage units, large multi-unit office complexes, classroom facilities.

The market for relocatable buildings varies from Eastern to Western Canada, with workforce housing supporting the oil industry still a significant driver in the west. In the east, the market is more diverse including support structures for natural resource industries as well as educational facilities.

MBI expects to see greater diversification away from the resource sector and into markets such as construction site offices, educational units, and retail units. These markets typically generate a recurring revenue stream with average lease durations of 12 months or greater; return the original equipment cost through revenue within four years on average; and require lower maintenance costs than units used for the resource sector.

Modular construction methods have been and continue to be applied to a number of unique projects in the hospitality, education, and multifamily markets, as the case studies in this report have demonstrated.

**Custom 2-Story Office Complex.
Built by Black Diamond Group.
Honorable Mention: Permanent
Office Over 10,000 Sq. Ft.**



Thank you to our 2020 MBI Corporate Sponsors

GOLD



SILVER



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