MODULAR BUILDING INSTITUTE

2020 ANNUAL REPORT

Commercial Modular Construction Relocatable Buildings

MODULAR BUILDING INSTITUTE

About the Modular Building Institute

Founded in 1983, the Modular Building Institute (MBI) is the only international nonprofit trade association serving the commercial modular construction industry. Members are manufacturers, fleet owners, and contractors of commercial modular building projects, as well as suppliers of building components, services, and financing. Members are located in 20 countries around the globe and provide all types of building space, from relocatable buildings to complex multi-story permanent construction projects. MBI's mission is to grow the industry and its capabilities by encouraging innovation, quality, and professionalism through communication, education, and recognition.

Each year, MBI hosts World of Modular, the largest gathering of professionals in the modular construction industry. For more information about industry events, visit www.modular.org.

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.

Cover:
Private Energy Company.
Built by Wilmot Modular Structures & Ramtech Building Systems.
Honorable Mention: Relocatable Modular Office Under 10,000 sq. ft.

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The definitive source for information about relocatable buildings in North America

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Wing Aviation, LLC - Christiansburg NEST (exterior). Built by BMarko Structures, LLC. ***First Place: Relocatable Modular Office Under 10,000 sq. ft.***

ABOUT the Modular Construction Industry

Unlike the federally-regulated HUD Code manufactured housing industry, the modular construction industry is regulated primarily at the state and local levels by code and agency administrators. As with site-built structures, the modularly constructed facility must meet the local codes where the building is to be located. There is no special "modular building code" or exceptions for a building constructed utilizing the modular construction process. It is simply a different and more efficient manner to assemble the materials and components of a building.

Modular construction can be utilized for commercial, residential, institutional, or industrial applications.

Commercial Modular Buildings are non-residential factory-built structures designed to meet provincial, state, and local building codes. Commonly, these buildings are constructed in accordance with the International Building Code (IBC) or some code modeled after the IBC.

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

Relocatable Buildings (RB) – Relocatable buildings are defined in the International Existing Building Code as partially or completely assembled buildings constructed and designed to be reused multiple times and transported to different building sites.

Permanent Modular Construction (PMC) – PMC is an innovative, sustainable construction delivery method utilizing offsite, lean manufacturing techniques to prefabricate single or multi-story whole building solutions in deliverable 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.

Wing Aviation, LLC - Christiansburg NEST (interior).

This report focuses on relocatable buildings in North America.

Charles Harwood Temporary Modular Facility. Built by Modular Genius, Inc. & Specialized Structures, Inc.
First Place: Relocatable Modular Healthcare.

RELOCATABLE BUILDINGS SECTOR – Markets Served

Education

Relocatable buildings have become a critical factor in managing student demographics and increasing enrollments. Relocatable classrooms are also ideal for swing space during new construction or renovation. Convenient, flexible, cost-effective temporary buildings can be delivered and operational in as little as 24-hours. These classrooms are measured for quality and code compliance by state or third-party agencies through routine and random inspections, testing, and certification services.

Customers may choose single classrooms or arrange multiple buildings in clusters to create a campus feel. MBI members supply steps, decks, ramps, and even furniture. Members also offer lease, purchase, and lease-to-purchase financing for a variety of public and private school needs. These classrooms are sometimes referred to as temporary, portable, or mobile classrooms.

School districts across North America are collectively the largest owners of relocatable classrooms, with about 180,000. California schools own close to 90,000 units; Texas schools own about 20,000; and Florida owns about 17,000. Typically, larger school districts with high growth are more likely to own the units, which explains why California, Texas, and Florida have so many. States like Georgia, North Carolina, Virginia, and Maryland own and operate about 3,000 each.

Construction-Site

Relocatable buildings have their roots in construction-site trailers, where speed, temporary space, and relocatability are important. Used as standard field offices, construction site and in-plant buildings are available for immediate delivery. Standard construction is wood, but steel units are available to meet noncombustible requirements. In-plant buildings are available as single- or two-story units for industrial environments with

GE Aviation. Built by Pac-Van, Inc. & Conical. ***First Place: Relocatable Modular Special Application.***

Boston Pop-Ups – "She Village". Built by Modlogiq Inc. ***First Place: Relocatable Modular Retail.***

noise-reducing insulation. They are typically moveable by forklift and include electrical and communications wiring, heating, air conditioning, and even plumbing.

Healthcare

Relocatable buildings for healthcare applications are designed and constructed to uncompromising standards of quality. A customer's new clinic, hospital extension, laboratory, diagnostic center, MRI unit, dentist office, or other medical facility can be open for business and serving communities in as little as a few days. Is your interest in serving patients as quickly as possible in the most-safe and aesthetically pleasing environments available? These facilities offer quick, quiet, safe, and clean buildings with an unlimited choice of interior décor and furniture and equipment leasing.

General Administrative and Sales Office

When production demands increase, relocatable buildings can temporarily enlarge a current facility without permanent alterations to the site. Because the space is not permanent, many companies are able to expand without the budget approval process necessary for traditional capital expenses. Relocatable offices can be single- and multi-story buildings configured to include independent offices, conference rooms and large open spaces for cubicles or other partition systems. Large and small businesses, as well as local and state governments, are

typical users of relocatable office space.

Commercial/Retail

Earlier occupancy means quicker return on investment. For retail occupancies, this can mean significant cash flow advantages. Standard floor plans are available for immediate delivery while custom buildings are built to specifications in weeks, not months. Unique to the modular process is concurrent construction: site-work occurs while buildings are being put together in a quality-controlled factory.

Typical retail applications include new home sales centers, banks, golf pro shops, automobile fleet ownerships, college bookstores, and concession stands. If a client's emerging business needs are short term, temporary space will accommodate their financial situation, space requirements, and deadlines.

Security

Relocatable buildings can be custom built for a variety of access and control situations. Toll booths, tickets sales offices, guard stands, and weigh stations are common applications. One- and two-story wood and steel buildings have straight walls or walls that are tilted to improve views and reduce glare. MBI members supply a full line of portable storage containers for either short- or long-term use. Heavy-duty storage units feature ground-level entry with double-swing doors for easy accessibility and are ideal for construction-site storage, equipment storage, warehousing, recordkeeping, industrial manufacturers, retailers, and others.

Equipment & Storage

Economical and convenient equipment and storage buildings offer onsite protection from inclement weather and theft. Day in and day out, relocatable buildings offer durability and strength. Equipment shelters for construction sites, chemical storage buildings, temporary generator housing, and other applications are designed and built by MBI members to guard a client's investment. These buildings can be as

Transnet TPT - Durban Harbour. Built by Modular Site Solutions (Pty) Ltd. & Container Conversions (Pty) Ltd.
First Place: Relocatable Modular Office Over 10,000 Sq. Ft.

Medical Shelter (exterior). Built by RI SpA. ***Honorable Mention: Relocatable Modular Healthcare.***

simple as steel containers to units that are heated and air conditioned with exteriors of brick, stone aggregate, or stucco.

Emergency /Disaster Relief

There is simply no other means of providing fast, transitional shelter and basic community needs following natural disasters than relocatable buildings. Relocatable buildings can be quickly and efficiently deployed for emergency shelter, medical and educational needs, or to accommodate relief workers.

Medical Shelter (interior)

El Tambo Camp. Built by Tecno Fast S.A. *Honorable Mention: Relocatable Modular Workforce Housing.*

DATA Collection Process

Data for this report came primarily from the following sources:

Publicly available data and financial reports from companies such as WillScot (NASDAQ: WSC), McGrath Rentcorp (NASDAQ: MGRC), Mobile Mini (NASDAQ: MINI), Pac-Van (NASDAQ: GFN), and several Canadian companies with information available from SEDAR.

Internally gathered data – MBI collects data on its members when each renews its annual membership. The 2020 renewal cycle garnered information about revenue, markets, and fleet utilization for 2019.

Tiny Cabin. Built by Tecno Fast S.A.
First Place: Relocatable Modular Hotel.

MBI obtained revenue and fleet data from 25 companies engaged in the sale and lease of relocatable buildings in North America. This represents a majority of all companies in the market in terms of number of companies, revenue, and units owned.

While we have made every effort to obtain relevant data from all available sources and to make appropriate currency conversions when necessary, we caution that this report is based on the best available data and may not be representative of specific company activities. The data obtained by companies for this report is only accurate to the extent that the data provided by the member companies is accurate.

It is important to note that not all data collected from each company was used in every statistical calculation. This report represents the most comprehensive single source of data on a diverse industry over a broad geographic region and within multiple markets and is based on the best available data.

Size of the Lease Fleet

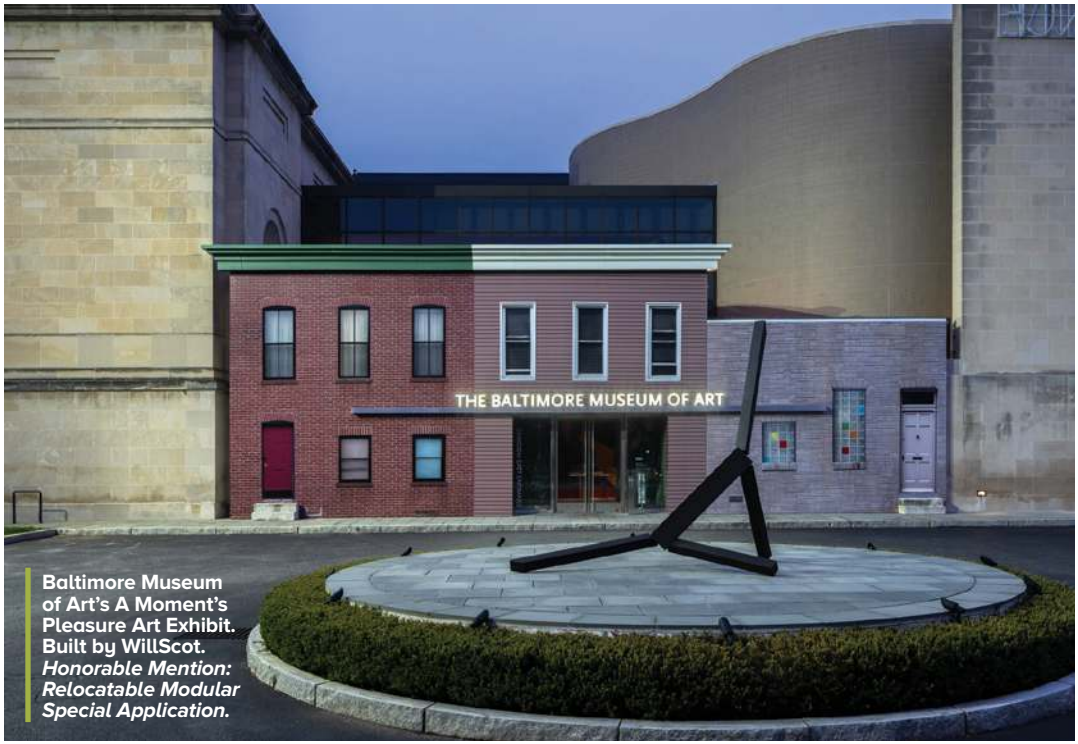
MBI estimates that there are over 500,000 code compliant relocatable buildings in use in North America today. Public

school districts across North America collectively own and operate about 200,000 relocatable classrooms, with the industry owning and leasing about 330,000 buildings. Additionally, many construction companies own a fleet of construction offices that move from site-to-site. These figures do not include noncoded units such as personal storage units, although these units typically make up about 15 percent of a provider's fleet.

MBI analyzed all sources of data on a total of 307,297 industry-owned relocatable buildings constituting greater than 90 percent of the estimated total of units in North America.

The largest fleet owners control about 83 percent of all industry owned units in North America. These companies include WillScot, Mobile Modular Management Corporation (McGrath Rentcorp), Pac Van, Mobile Mini, and Satellite Shelters. The next ten largest companies in terms of lease fleet size own approximately 9 percent of the industry owned fleet. These companies typically have between 1,000-10,000 units in their lease fleet. The remaining industry companies, typically with less than 1,000 total units owned, control about 8 percent of all industry-owned units. Across all sizes, the average (mean) fleet size for North American fleet owners in 2019 was 13,968 based on fleet information from 22 companies. However, only four of the companies in this data set have a lease fleet larger than the mean. The median number of units from this data set was 1,581.

The percent of units owned varies greatly by region as some of the larger players are more heavily concentrated in certain regions and less in other regions, while some



Baltimore Museum of Art's A Moment's Pleasure Art Exhibit. Built by WillScot. ***Honorable Mention: Relocatable Modular Special Application.***

of the mid-sized companies are state or region focused. For example, a company with 1,000 units in a smaller region may have a greater local market share than a large fleet owner that is less active in that same region. Additionally, there are very few large customers for relocatable buildings. This regionalization of markets and diversity of customers keeps the market competitive despite mergers and consolidations.

Business Operations

Each year, MBI compiles data about the modular construction industry and each year, the public wants more information and detail. One of the challenges in gathering this data is the diversity among the industry participants. Modular construction in and of itself is not a NAICS category. Rather, our industry tends to fall under one of several NAICS categories including:

321992 – pre-fabricated wood buildings and structures

332311 – pre-fabricated steel buildings and components

236220 – commercial building construction

531120 – commercial building rental or leasing

In general, relocatable buildings, if property maintained and operated, have useful lives comparable to any other building type. Capital improvements, such as HVAC replacement and roof replacement, are frequently made to these units, which can extend their useful lives for several additional years.

A typical relocatable building will be moved an average of seven times over its life. Again, this varies based on the size and type of the unit. For example, a smaller building made up of one or two modules may move 12 to 15 times over its life. Construction site offices are good examples of this. Larger complexes, on the other hand, may only move three to five times over their life.

Average Age of Units in Fleet

Nineteen companies provided data on the average age of a unit in their lease fleet, with an average of 10.6 years. Last year, the average age of units in the lease fleet was 11 years, indicating that many companies acquired new (or newer) inventory in 2019 bringing the average age down. In fact, nine companies provided information about their capital expenditures for new lease fleet in 2019, totaling approximately $370 million.

Average Lease Term

For 2019, five companies provided data on average the average lease term length. These terms varied depending upon the product leased (single wide, double wide, complex). Overall, the average lease term in 2019 was 23.4 months. Our findings indicate that in order to recoup the initial capital investment in a unit, a fleet owner typically needs to have the unit on lease for between 40 – 50 months. Once the initial investment is recouped, it is not uncommon for a fleet owner to continue leasing the unit to recover the investment a second or third time, and finally sell the unit (on average after 10 years).

Monthly Rental Rate of Return

The average monthly rental rate of return (also referred to as return on investment or lease rate factor) is calculated by dividing the averages of monthly rental revenues by the cost of rental equipment on rent for the period. For example, if a company has an average monthly rental rate of 2.0 percent, it is

generating revenue equal to 2.0 percent of the total cost of the equipment on lease each month, or 24 percent of the unit's cost per year. In this case, renting the unit for 50 months would generate revenue sufficient to cover 100 percent of the unit's original cost. A company with an average monthly rental rate of just 1 percent would require 100 months of rental income to recover initial costs.

For 2019, nine companies reported their average monthly rental rate. MBI took a simple average of these nine rates to calculate an industry average monthly rental rate of return of 2.48 percent. Based on this information, the average company would need to consistently rent its unit for 40 months to recover the original cost of equipment. This average is across all company sizes and across all product lines (single wides, double wides etc.).

MBI did not obtain sufficient data to further segment the rate among product types but there is anecdotal data to demonstrate that the rate is higher among product lines such as container-based ground level offices. The trade-off to using ground level container offices is the potential loss of revenue for renting ancillary products such as stairs and ramps.

Sales Price to Original Cost Ratio

Over the last 10 years, the average sale price of a relocatable building has exceeded 100 percent of its original cost, demonstrating that these units retain their value well. There are many factors in determining value and sale price, including the escalating cost of constructing new units to newer versions of the building codes. Another key factor is the proper operation and maintenance of the unit over its life.

In 2019, seven companies reported their average sales price to original cost information to MBI. These companies accounted for 62 percent of the units in the entire data set. Using a weighted average for the companies based on their fleet size and the average ratio provided by each company, MBI has calculated

Sources of Revenue by Market

- Education **17%**
- Construction site offices **29%**
- Administrative and sales offices **22%**
- Workforce housing **12%**
- Retail **4%**
- Other (healthcare, institutional) **16%**

Texas City Modular Campus. Built by Aries Building Systems. ***Honorable Mention: Best Relocatable Modular Education Over 10,000 Sq. Ft.***

that the average sale price to original cost ratio for 2019 was 1.52:1. This includes the sale of all types of units (single wides, double wides, complexes).

Many fleet owners will not consider selling a relocatable building for less than 125 percent of its original cost as the equipment is more valuable as a recurring revenue generating asset.

Revenue by Product or Service

Total revenue reported in 2019 was $2,548,411,602 for a mean average $101,018,351. In this case, the mean average is not very useful given that the largest company included (WillScot) accounts for 40 percent of this total. The median average revenue among these twenty-five companies for 2019 was $12,000,000. Five companies reported revenues in excess of $100 million, four companies had revenue between $50 – $100 million, five had revenue between $10-50 million, and 11 had revenue of $10 million or less.

Companies reported 2019 revenue was generated from the following markets: Companies engaged in the relocatable building sector generally derive a majority of their revenue from the lease of units. For 2019, the average revenue from leased units and related products (stairs, ramps) accounted for 56.7 percent of total revenues, down significantly from 70 percent in 2018. The sale of new and used units accounted for 22.8 percent of total revenue, up significantly from 10 percent in 2018. Other sources of revenue include services such as delivery and installation of relocatable buildings, constituting about 20.5 percent of total revenues.

Regionalization

Despite the growing control of the industry fleet by a handful of larger companies, the day-to-day operations of the industry are still very much regional in nature. Typical clients include general contractors and school districts, seeking temporary and cost-effective solutions for space needs. In any given market, the larger companies must still compete with several smaller fleet owners serving the region. Drivers of relocatable buildings often include availability and quality of the product, price, and service.

The differences in state building codes also prevent a larger player from “flooding the market” and shipping in excess product from another region.

Given that all relocatable buildings must meet the wind, snow, and seismic conditions where they are to be located, it is not practical for any company to build one type of building that will meet every possible local condition. For example, a relocatable building that meets the wind zone requirements in Florida may not be suitable for the seismic conditions in California, or the snow loads in New York.

Depreciation

When asked about depreciation and residual values of the lease fleet, responses varied based on condition and capital improvements to the fleet, market use of the fleet, and the composition of the types of units in the lease fleet (construction offices, classrooms, etc.). A majority of the units in the industry lease fleet are depreciated over a 20-year period with a 50 percent residual value. Residual value is understood to be the anticipated "value" of the building at the end of the lease. The mean annual depreciation has ranged between five and six percent for the last several years.

New guidance from the IRS was recently released to address bonus deprecation under the Tax Cuts and Jobs Act of 2017. The new law allows for an additional

Industrial Lunchrooms & Offices. Built by Black Diamond Group. ***First Place: Best Relocatable Modular Assembly.***

first-year depreciation deduction and increased the bonus depreciation percentage from 50 percent to 100 percent for qualified property acquired and placed in service after September 27, 2017, and before January 1, 2023. This law change applies to depreciable business assets with a recovery period of 20 years or less.

Utilization

Industry utilization is defined two ways:

Unit count: Dividing the total number of units on lease by the total number of units available to be leased. Using this method, the average utilization rate for year end 2019 was 75.4 percent with 231,605 of the reported 307,297 units on lease.

Original Equipment Cost: Dividing the original equipment cost (OEC) of the units on rent by the total original equipment cost of the equipment available. Seven companies representing nearly half of the total fleet reported utilization using the OEC method for 2019, for an average utilization rate of 80.58 percent.

The method used can impact the reported utilization rate. For example, if a company owns one unit at a cost of $20,000 and two other units costing $10,000 each, it has 3 total units at an original equipment cost of $40,000. If the $20,000 unit and one of the $10,000 units are on lease, the utilization rate would be 66.7 percent (2 units/3 units) using the unit count method, but 75 percent ($30,000/$40,000) using the OEC method.

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

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

Canadian Market Overview

The Modular Building Institute (MBI) represents 63 companies in Canada including 32 modular manufactures and contractors and approximately 50 manufacturing locations across Canada. These companies account for approximately 80 percent of the entire modular industry activity in Canada.

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 sq.ft. 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 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

Volkswagen and Subaru Flex Swing Space. Built by WillScot.

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 housing developments. To the greatest extent possible, MBI separated and did not include revenue from construction projects or 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 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, natural gas, and mineral exploration/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.

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, and 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.

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

Key Findings

- Total industry revenue reported exceeded $2.5 billion, including $211 million in Canada.
- The average annual corporate revenue attributable to the relocatable buildings sector in North America in 2019 was $101,018,351 compared to $26,492,385 in Canada.
- The median annual revenue for North America was $12 million and $2.9 million in Canada.
- Overall demand in North America for relocatable buildings remained solid in 2019, with 75.4 percent of all units reported on lease as of December 31, 2019. Using the OEC method, overall utilization for 2019 was 80.58 percent.
- Utilization rate in Canada increased slightly to 61.1 percent, up from 60.6 percent in 2018.
- Over $370 million reported in capital expenditures for new inventory in 2019 for North America.
- Average age of unit in lease fleet was 10.6 years for 2019.
- On average, sale price to original cost ratio was 1.52:1, its highest average level in several years.
- The average monthly rental rate of return was 2.48 percent, meaning companies can recover their initial investment on a relocatable unit in 40 months.
- Revenue mix was generated from roughly the same market segments with about two-thirds of the industry revenues coming from relocatable classrooms and construction site offices.
- Mergers and consolidations continue, with 83 percent of all units owned by just five companies* and 91 percent owned by 15 companies. *In March 2020, WillScot and Mobile Mini, announced a merger combining two of the five largest fleet owners.
- Customers in all these markets will continue to utilize relocatable buildings for their speed, flexibility, practicality, and cost.

StoryBook Shelter (exterior). Built by RI SpA. *First Place: Relocatable Modular Education Under 10,000 Sq. Ft.*

GUIDE FOR CODE COMPLIANCE FOR RELOCATABLE BUILDINGS

All newly constructed relocatable buildings must be constructed in accordance with the building codes that are in effect at the time of the building's construction. These buildings are constructed offsite and many elements are concealed when the building arrives to the site (closed construction).

As such, most states (35) have a state-wide administrative program in place to determine if the building itself was constructed in accordance with all applicable codes. The terminology varies within state programs with many referring to these buildings as “industrialized buildings”, or even “manufactured buildings.” The latter term is not generally preferred as it tends to imply that these buildings are constructed to the same federal HUD code as manufactured housing products, which is not the case.

These state programs require manufacturers of relocatable buildings to be approved with the state agency, have a quality assurance program approved, and submit regular reports. Additionally, each floor plan the manufacturer intends to build must be reviewed and approved by a licensed third-party design professional in the state. These professionals are sometimes referred to as compliance assurance agencies (CAA) or third-party inspection agencies (TPIA).

Once the manufacturer and plan is approved, every manufactured section or module of an industrialized building shall be marked with a label supplied by the TPIA that includes the name and address of the compliance assurance agency and the certification label number.

The relocatable building will also have a manufacturer’s data plate that is permanently attached on or adjacent to the electrical panel posted in the location as noted on the drawings, and includes information such as:

StoryBook Shelter (interior).

1. **Occupancy group**
2. **Manufacturer’s name and address**
3. **Date of manufacture**
4. **Serial number of module**
5. **Design roof live load, design floor live load, snow load, wind, and seismic design**
6. **Approved quality assurance agency or approved inspection agency**
7. **Codes and standards of construction**
8. **Envelope thermal resistance values**
9. **Electrical service size**
10. **Fuel burning equipment and size**
11. **Special limitations if any**

Following this process, the building is ready to be permitted and placed on its first location and is considered approved or “registered” in the state. Registered buildings should be accepted in all localities as meeting the requirements of the codes for the building itself. The label affixed by the

Carey Baptist Grammar M-Link Building (exterior). Built by FleetwoodBuilding Solutions. *First Place: Relocatable Modular Education Over 10,000 Sq. Ft.*

third-party is the indication for the local building code official that the unit does in fact comply with codes. The local official, therefore, generally has no jurisdiction over "what is inside the box." However, local requirements affecting buildings, such as local land-use and zoning, local fire zones, site development, building setback, side and rear yard requirements, property line requirements, and subdivision regulations, are within the scope of the local authority.

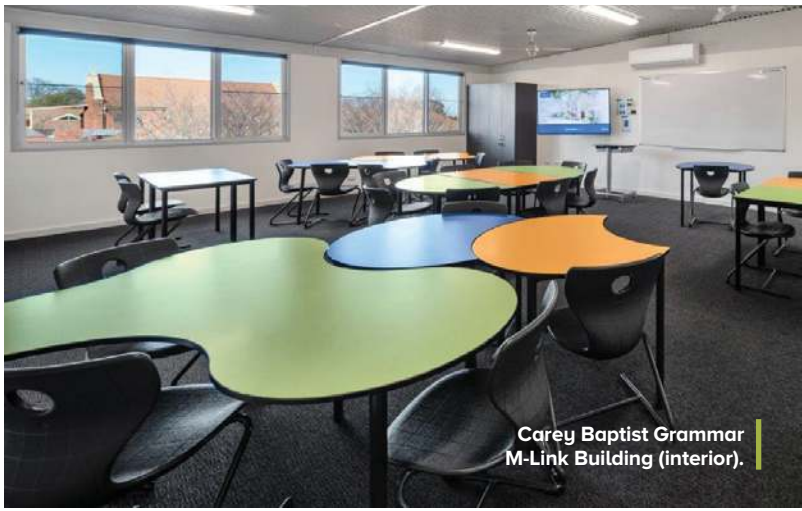
Existing Relocatable Buildings

Unique to relocatable buildings is that they are designed and constructed with the explicit purpose of being relocated and used multiple times possibly at multiple locations, including in other states.

Once relocated from its original site, the building is now considered an "existing building" (per IBC 2015, one for which a legal building permit has been issued). Prior to 2015, Chapter 34 of the IBC contained compliance information for existing buildings. Beginning with the 2015 IBC, Chapter 34 has been removed in its entity and replaced with a "pointer" to the International Existing Building Code or IEBC (IBC 2015 Section 101.4.7).

In Chapter 13 of the 2015 IEBC, "Relocated or Moved Buildings," Section 1301.1 Scope states that "this chapter provides requirements for relocated or moved structures, including relocatable buildings as defined in Chapter 2." Those requirements address various life safety issues such as the wind loads, seismic loads, and snow loads. Any existing relocatable building moved into a new jurisdiction must meet these load conditions. The local code official can find this information from the manufacturer's data plate affixed to the building.

Aside from the specific site and zoning issues, a local building code official needs only to locate the third-party label and the manufacturer's data plate on the relocatable building to determine compliance. If the building is missing either the label or the data-plate, the building is subject to approval by the local code official.



Carey Baptist Grammar M-Link Building (interior).

Building Envelope – The physical separator between the interior and the exterior environments of a building. It serves as the outer shell to help maintain the indoor environment (together with the mechanical conditioning systems) and facilitate its climate control. Building envelope design is a specialized area of architectural and engineering practice that draws from all areas of building science and indoor climate control.

Building Site – A lot, the entire tract, subdivision, or parcel of land on which industrialized housing or buildings are sited.

Building System – The design and/or method of assembly of modules or modular components represented in the plans, specifications, and other documentation which may include structural, electrical, mechanical, plumbing, fire protection, and other systems affecting health and safety.

Closed Construction – A building, component, assembly, subassembly, or system manufactured in such a manner that all portions cannot be readily inspected at the installation site without disassembly or destruction thereof (source: Louisiana Industrialized Buildings program).

Commercial Structure – An industrialized building classified by the building codes for occupancy and use groups other than residential for one or more families.

Compliance (or Quality) Control Program – The manufacturer's system, documentation, and methods of assuring that industrialized housing, buildings, and modular components, including their manufacture, storage, handling, and transportation conform with this chapter.

Compliance Assurance Agency (aka third-party inspection agency) – An architect or professional engineer, or an organization, specially qualified by reason of facilities, personnel, experience, and demonstrated reliability, to investigate, test and evaluate modular buildings; to list such buildings complying with standards; to provide adequate follow-up services at the point of manufacture to ensure that production units are in full compliance; and to provide a label as evidence of compliance on each manufactured section or module. (source: Virginia Industrialized Buildings Program).

Component – A subassembly, subsystem, or combination of elements for use as a part of a building system or part of a modular component that is not structurally independent, but may be part of structural, plumbing, mechanical, electrical, fire protection, or other systems affecting life safety.

Decal (insignia or label) – The approved form of certification issued by the state administrative office to the manufacturer or builder to be permanently affixed to the module indicating that it has been constructed to meet or exceed the code requirements.

Deconstruction – The process of taking a building or structure, or portion thereof, apart with the intent of repurposing, reusing, recycling, or salvaging as many of the materials, products, components, assemblies, or modules as possible.

Design Package – The aggregate of all plans, designs, specifications, and documentation required by these sections to be submitted by the manufacturer to the design review agency or required by the design review agency for compliance review, including the compliance control manual and the on-site construction documentation. Unique or site-specific foundation drawings and special on-site construction details prepared for specific projects are not a part of the design package.

Erection/Installation/Set – The process of blocking, leveling, and anchoring a modular building unit on the building site upon delivery.

Installation – On-site construction of industrialized housing or buildings (see definition of on-site construction).

Local Building Official – The agency or department of a municipality or other local political subdivision with authority to make inspections and to enforce the laws, ordinances, and regulations applicable to the construction, alteration, or repair of residential and commercial structures.

Manufacturer – A person who constructs or assembles modules or modular components at a manufacturing facility which are offered for sale or lease, sold, or leased, or otherwise used.

Manufacturing Facility – The place other than the building site, at which machinery, equipment, and other capital goods are assembled and operated for the making, fabricating, constructing, forming, or assembly of industrialized housing, buildings, modules, or modular components.

Marriage Wall/Cross Over Connections – The joint between the modules in a complex, commonly called a mate-line or mod-line.

Module – A three-dimensional section of industrialized housing or buildings, designed and approved to be transported as a single section independent of other sections, to a site for on-site construction with or without other modules or modular components.

Off-Site Construction – The planning, design, fabrication, and assembly of building elements at a location other than their final installed location to support the rapid and efficient construction of a permanent structure. Such building elements may be prefabricated at a different location and transported to the site or prefabricated on the construction site and then transported to their final location. Off-site construction is characterized by an integrated planning and supply chain optimization strategy (source OSCC).

Permanent Modular Construction (PMC) – An innovative, sustainable construction delivery method utilizing off-site, lean manufacturing techniques to prefabricate single or multi-story whole building solutions in deliverable 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.

Prefabricated – The manufacture or fabrication of sections of a building at an off-site location which are delivered to and assembled at the building site.

Relocatable/Industrialized building – A partially or completely assembled building that complies with applicable codes and state regulations and is constructed in a building manufacturing facility using a modular construction process. Relocatable modular buildings are designed to be reused or repurposed multiple times and transported to different sites.

Repurpose – To divert a material, product, component, module, or building from the waste stream for use for an application that is different than its original use or occupancy.

Reuse – To divert a material, product, component, module, or building from the waste stream in order to use it again for a purpose that is consistent with its original use or occupancy.

State Administrative Office (SAO) – The designated representative for the enforcement of this chapter and shall act as the building official for registered industrialized buildings.

Site or Building Site – A lot, the entire tract, subdivision, or parcel of land on which industrialized housing or buildings are sited.

Third-Party Inspection Agency (TPIA) – An approved person or entity determined by the state or program to be qualified by reason of facilities, personnel, experience, demonstrated reliability, and independence of judgment to inspect industrialized housing, building, and portions thereof for compliance with the approved plans, documentation, compliance control program, and applicable codes. Also known as “Approved Testing Facility or ATF,” or “Compliance Assurance Agency.”

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