MODULAR BUILDING INSTITUTE

The industry's best resource for information about the relocatable building industry in North America

2022 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 twenty 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 its World of Modular conference, the largest gathering of professionals in the modular construction industry. For more information about industry events, visit www.modular.org.

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1580 & 1582 Vernon Drive (exterior)
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2022 Best in Show, Relocatable Modular Buildings

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KEY FINANCIAL DATA AND METRICS
FOR THE RELOCATABLE BUILDINGS INDUSTRY
2022 ANNUAL REPORT

The industry's best resource for information about the relocatable building industry in North America

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Estúdio Lapinha
Built by Lafaete Rentals & CMC Modules
First Place, Relocatable Modular Hotel


# ABOUT

## the Modular Construction Industry

Unlike the federal HUD Code manufactured housing industry, the modular construction industry is regulated primarily at the state, provincial, and local levels by code officials 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 at an offsite location. Modular construction can be utilized

Sleep Over Motels
Built by Modular Site Solutions (Pty) Ltd.
Honorable Mention, Relocatable Modular Hotel

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:

Estúdio Lapinha
Built by Lafaete Rentals & CMC Modules
First Place, Relocatable Modular Hotel

**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.

**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.

**This report focuses on relocatable buildings in North America.**

# RELOCATABLE BUILDINGS SECTOR
# Markets Served

Massachusetts Biotech Confidential Client - Building 2
Built by Triumph Modular & Whitley Manufacturing
First Place, Modular Relocatable Office Over 10,000 Sq. Ft.

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.

## 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 200,000 total units. 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.

MBI analyzed thirteen educational projects completed in 2021 (three in Canada; ten in the United States). The average size of these relocatable education facilities was 12,215 sq. ft., consisting of an average of 25 modules. The average project cost was US $1,583,377, with the modular portion of the project making up approximately 80 percent of the total cost (design, permits, site work makes up the balance). On average, these projects were completed in 119 days.

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

## Healthcare

While historically not a large market for the relocatable building sector, the global pandemic exposed a great need for temporary medical facilities. While some localities chose to covert hotels and convention centers into COVID triage facilities, many chose to utilize relocatable buildings to fit their pressing needs.


Relocatable Classrooms
Wilmot Modular Structures, Inc. & Diamond Builders (original manufacturer)
First Place, Relocatable Modular Education Under 10,000 Sq. Ft.

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. These facilities offer quick, quiet, safe, and clean buildings with an unlimited choice of interior décor and furniture and equipment leasing.

To help expedite the use of temporary facilities going forward, MBI worked with the Facility Guidelines Institute (FGI) on the development of a new resource titled "Guidance for Designing Health and Residential Care Facilities that Respond and Adapt to Emergency Conditions." This guide contains information for health care facility planners to better utilize modular construction to meet short, intermediate, and long-term needs.

## General Administrative and Sales Office

When production demands increase, relocatable buildings can temporarily enlarge a current facility without permanent alterations to the site. Since 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- or 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.

MBI analyzed ten relocatable building offices completed in 2021. The average size of these projects was 10,932 sq. ft. consisting of nineteen modules. On average these projects took 113 days to complete at a total average cost of $1,279,019.

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

École Secondaire André-Laurendeau (exterior)
Built by AMB Modulaire & Mobilfab/ Groupe Pro-Fab/ RG
Honorable Mention, Relocatable Modular Education Over 10,000 Sq, Ft.

## 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. MBI members provide a quick, safe space following natural disasters including wildfires in California, hurricanes, tornadoes, and of course, in response to COVID-related needs. During the COVID pandemic, MBI reached out to hundreds of federal, provincial, and state emergency management agencies to share information about the advantages of rapidly deployable relocatable buildings and available inventory.

# DATA Collection Process

MBI obtained revenue and fleet data from thirty companies engaged in the sale and lease of relocatable buildings in North America. This data was either obtained directly from the company or from public financial disclosures. This data represents approximately eighty-six percent of the fleet in North America.


**The Club at Flying Horse**
**Built by Vesta Modular & Advanced Modular**
**First Place, Relocatable Modular Retail**

MBI also analyzed a total of thirty-eight relocatable building projects completed in 2021, including six in Canada. These projects were built for the education, office, healthcare, retail, and workforce housing markets. The average size of projects across all markets was 9,171 sq. ft. consisting of nineteen modules. These projects took 115 days to complete at an average project cost of $1,106,846 each. Twenty-two of these projects were wood framed while sixteen were steel, including three container-based structures.

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

**Dellside Dormitory**
**Built by Vesta Modular &**
**First String Space Inc.**
**First Place, Relocatable Modular Dorm**

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. In some cases, we used a simple average of all data, and other times we used a weighted average when the data was available. This report represents the most comprehensive source of data on a diverse industry over a broad geographic region, within multiple markets.

## 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 325,000 buildings amounting to over $5 billion in assets. Additionally, many construction companies own their fleet of construction offices that move from site-to-site, not included in this data. These figures also 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 obtained data from fleet owners controlling 281,191 rental units, or roughly 86 percent of industry owned assets. Across all companies, the average (mean) fleet size for North American fleet owners in 2021 was 12,781 units. However, only four companies in this data set have a lease fleet larger than the mean. The median number of units from this data set was 2,500.

## Top Trends in 2021: Mergers & Acquisitions Continue

In 2021, at least fifteen companies in the relocatable building space were acquired including:

**Hecht Trailers.** WillScot Mobile Mini Holdings Corp announced that it closed the acquisition of the rental assets of Hecht Trailers in New Jersey. This acquisition adds over 2,000 storage units and over two hundred modular units in the Company's existing markets in the northeast United States.

**McDonald Modular Solutions.** WillScot Mobile Mini Holdings Corp closed the acquisition of McDonald Modular Solutions, adding 1,300 modular units and over three hundred storage units in its existing markets in Michigan and Ohio.

**Sommer's Mobile Leasing, Inc.** WillScot Mobile Mini Holdings Corp. announced that it closed the acquisition of Sommer's Mobile Leasing, Inc. This acquisition adds about 1,200 modular units and about five hundred storage units in the Company's existing U.S. markets in Ohio and West Virginia.

**Triumph Modular.** Triumph Modular has been acquired by Tecno Fast, the Latin American leader in design, automated manufacturing, lease, and sale of modular space. The company will continue operating in the United States as Triumph Modular.

**Design Space Modular Buildings.** McGrath RentCorp announced it has completed its previously announced acquisition of Design Space Modular Buildings. Design Space is a leading modular building and portable storage provider in the Western U.S. with its network of fifteen branches and over one hundred employees.

**BD Modular.** VESTA Modular announced it had completed the acquisition of Dallas-Based BD Modular. BD serves clients in the education, industrial, construction, government, and retail sectors.

**Kitchens to Go.** McGrath RentCorp announced it has acquired Kitchens to Go, a leader in both interim and permanent modular solutions for foodservice providers that require flexible facilities to continue or expand operations.

**Innovative Modular Solutions.** VESTA Modular announced it had completed the acquisition of Innovative Modular Solutions. Founded in 1999 and headquartered in Oswego, IL, IMS is a provider of temporary and permanent modular buildings. IMS serves clients in the education, industrial, construction, government, and retail sectors.

**Jobsite Mobile Offices.** Aries Building Systems acquires Jobsite Mobile Offices, a


**HEB Office Space (exterior)**
**Built by Aries Building Systems, LLC**
**Honorable Mention, Relocatable Modular Single-Wide**

**Elk Grove USD – Florin (exterior)**
**Built by Aries Building Systems, LLC & Class Leasing, LLC.**
**Honorable Mention, Relocatable Education Under 10,000 Sq. Ft.**

mobile office and field office company serving the Midwest region since 1971.

**Precision Structures Inc.** Aries Building Systems acquired Precision Structures Inc. of Pasadena, Texas – known for their modular products and services throughout Southeast Texas and Louisiana.

**General Finance Corporation.** United Rentals, Inc. and General Finance Corporation announced their entry into a definitive agreement under which United Rentals will acquire General Finance representing a total enterprise value of approximately $996 million. General Finance, which operates as Pac-Van and Container King in the U.S. and Canada, and as Royal Wolf in Australia and New Zealand, is a provider of mobile storage and modular office space.

**American Mobile Leasing, Inc., Equipe Container Services, Inc. d/b/a Moveable Container Storage (MCS), and Saf-T-Box, LP.** WillScot Mobile Mini Holdings Corp. announced that it closed the acquisitions of American Mobile Leasing, Inc., Equipe Container Services, Inc. d/b/a Moveable Container Storage (MCS), and Saf-T-Box, LP. Combined, these acquisitions add about 11,000 storage units in the Company's existing U.S. markets.

**Vanguard Modular Building Systems.** Black Diamond


University of Missouri at Columbia (exterior)
Built by Art's-Way Scientific, Inc.
First Place, Relocatable Modular Single-Wide

Group Limited announced that its U.S. subsidiary, BOXX Modular Inc. has acquired Exton, PA-based Vanguard Modular Building Systems for US $58.7 million. With the addition of 2,196 rental units from Vanguard, MSS fleet has grown to 8,856 units across North America.

## 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 itself is not a NAICS category. Rather, the industry falls under one of several NAICS categories including:

**321992 – prefabricated wood buildings and structures**
**332311 – prefabricated 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 Lease Term

These terms varied depending upon the product leased (single wide, double wide, complex). Overall, the average lease term in 2021 was 17 months, in line with the prior year average. 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 35 - 50 months (see monthly rental rate below). Once the initial investment is recouped, the fleet owners to continue leasing their units until sold, typically after ten years.

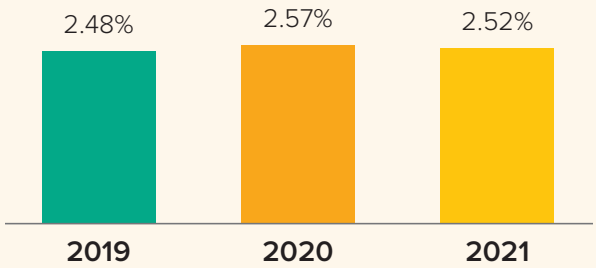
## Monthly Rental Rate of Return

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 percent, it is generating revenue equal to 2 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 three percent would require just 34 months of rental income to recover initial costs.

For 2021, MBI took an average of the reported rates to calculate an industry average monthly rental rate of return of 2.52 percent. Based on this information, a company would need to consistently rent its unit for 39.6 months to recover the original cost of equipment, excluding annual maintenance and capital improvements.

This rate of return has held consistent for the past three years, at 2.48 in 2019, to 2.57 in 2020, and 2.52 in 2021. This average is across all company sizes and across all product lines (singlewides, doublewides etc.). While not all companies provided the same data for all years, the three-year average provides a good benchmark for the industry.

**Monthly Rental Rate of Return, 2019-2021**



Hermeus Office and Engine Testing Center (exterior)
Built by BMarko Structures, LLC
Honorable Mention, Relocatable Modular Office Under 10,000 Sq. Ft.

## 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 and material price increases. Another key factor is the proper operation and maintenance of the unit over its life.

In 2021, companies accounting for about 190,000 units reported average sales price to original cost information. MBI has calculated the average sale price to original cost ratio for 2021 at 1.53x up from 1.08x in 2020. This includes the sale of all types of units (single wides, double wides, complexes).

## Average Age of Units in Fleet

Eight companies provided data on the age of a unit in their lease fleet, with an average of 11.5 years. The average age of units in the lease fleet was 11 years in 2018, 10.6 years in 2019, and 10.1 in 2020 indicating that

many companies continue to acquire new (or newer) inventory in 2021 keeping average age consistent year over year. In fact, reported capital expenditures for new lease fleet investment in 2021 exceeded $400 million.

### The Journey for a Typical Relocatable Building

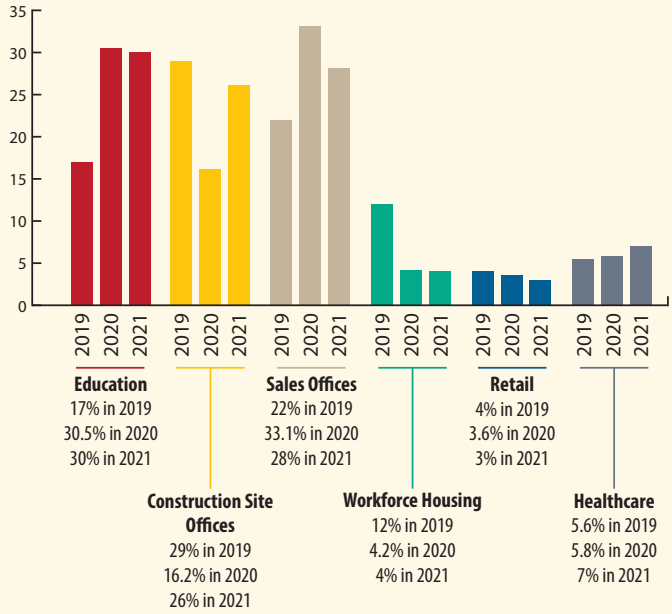
A unit is manufactured and put into service in a company's lease fleet, then initially leased to a customer on average for 17 months. The lease is either renewed or the unit is relocated to a new site for another customer with a new lease. Based on our data, the original cost of the unit is recovered around the fortieth month on lease. This cycle continues five to six times over the life of the building, with the owner incurring maintenance, insurance, and tax costs and possible capital improvements along the way. It is common for one unit to generate over 120 months of rental income for its owner, before being sold at an average for 1.53 times the original cost. Existing units hold their value well with the sales price increasing due to higher construction costs for new units. These higher costs are due to material price increases, increased code requirements, and labor availability.

## Revenue by Product or Service:

Twenty-seven companies reported revenue generated from the following markets in 2021:

Companies engaged in the relocatable building sector derive a majority of their revenue from the lease of units. For 2021, the average revenue from leased units and related products (stairs, ramps) accounted for 60.2 percent of total revenue, up from 48.8 percent in 2020. The sale of new and used units accounted for 25.9 percent in 2020 down from 31.9 percent of total revenue in 2020. Other sources of revenue include services such as delivery and installation of relocatable buildings, constituting about 13.9 percent of total revenues.

**SOURCES OF RELOCATABLE BUILDING REVENUE BY MARKET,**
North America, 2019-2021




## Regional Competition

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

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.).

Many 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

CSF Beausoleil School, Built by Fort Modular
First Place, Relocatable Modular Education Over 10,000 Sq. Ft.

depreciation has ranged between five and six percent for the last several years.

**Utilization:**
Utilization is a measurement to determine what percent of a company's assets are currently on lease generating revenue at a given time. MBI obtained fleet utilization data from 25 companies collectively owning 281,191 units. Of those units, 203,450 were on lease at year end 2021, for a weighted industry utilization rate of 72.4 percent. Over the past five years, overall utilization has averaged 77.3 percent for year-end 2017, 77.4 percent in 2018, 75.4 percent in 2019, 74.9 percent in 2020, and 72.4 percent last year.

## Key Findings

- Based on our calculations, the average RB company in North America has 2,500 units available for lease, with an approximate age of 11 years, a utilization rate of 72.4 percent, and a monthly rate of return of 2.52 percent. Sales of existing units in the fleet yield 1.53x the original cost.
- Total industry revenue reported to MBI exceeded $2.2 billion in 2021.
- Overall demand in North America for relocatable buildings was down, but remained solid in 2021, with 72.4 percent of all units reported on lease as of December 31, 2021.
- Average age of unit in lease fleet was 11 years for 2021 with a reported $400 million invested in capex for new inventory, with total industry assets in excess of $5 billion.
- On average, sale price to original cost ratio was 1.53x, up from 1.08x in 2020.
- The average monthly rental rate of return was 2.52 percent, meaning companies can recover their initial investment on a relocatable unit in 39 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.
- Across all companies, the average (mean) fleet size for North American fleet owners in 2021 was 12,781 units. 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 2,500.
- Mergers and consolidations continue, with 82 percent of all industry units owned by six companies.

Mobile Hospital
Built by RI SpA
Honorable Mention,
Relocatable Modular
Healthcare Over
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, most commonly the International Building Code (IBC). 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 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 floorplan 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 are 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:

1. **Occupancy group**
2. **Manufacturer's name and address**
3. **Date of manufacture**
4. **Serial number of modules**
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 third-party is the indication for the local building code official that the unit does in fact comply with codes. The local official, therefore, 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.


Aviasur Air Terminal
Built by Tecno Fast S.A.
Honorable Mention,
Relocatable Modular Assembly

San Borja Hospital
Built by Tecno Fast S.A.
First Place, Relocatable Modular Healthcare Over 10,000 Sq. Ft.

Once relocated from its original site, the building is now considered an "existing building" (per IBC, 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 14 of the 2018 IEBC, "Relocated or Moved Buildings," Section 1401.1 Scope states that "this chapter provides requirements for relocated or moved structures, including relocatable buildings as defined in Chapter two." 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.

It is important to note that there is no "expiration date" for these approval labels, provided the relocatable building has not been modified nor experienced any structural damage over time.

# DEFINITIONS

MBI adopted the definitions contained in the ICC/ANSI standard 1200 and 1205 for consistency. Sources for other terms not used in the standard include state administrative programs as well as the National Institute for Building Sciences.

**Accessory Dwelling Unit (ADU).** A smaller, independent residential dwelling unit located on the same lot as a stand-alone (i.e., detached) single-family home. (Source: American Planning Association).

**Authority Having Jurisdiction (AHJ).** Organization, political subdivision, office, or individual charged with the responsibility of administering and enforcing the provisions of the applicable building code. The authority having jurisdiction shall include a state agency or local building department.

**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.

**Certification Label.** A decal, insignia, or alteration decal.

**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.

**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 Program.** Procedures that state the guiding principles and define the framework for ensuring that construction documents approved by a design review agency, or that modular buildings inspected by a third-party inspection agency, comply with the applicable building codes.

**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.

**Data Plate.** A plate attached by the manufacturer or installer, to a modular building, or modular component that contains identifying information allowing code officials or end users to determine if the structure is suitable for installation in their jurisdiction, location, or project.

**Decal.** The approved form of certification issued by the authority having jurisdiction, to be permanently attached to the modular building, modular component or panelized system indicating that it has been constructed to meet or exceed the applicable building 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.

**Industrialized Building.** A commercial structure that is constructed in one or more modules, or constructed using one or more modular components, built at a location other that the commercial site and is designed to be used as a commercial building when the module or modular component is transported to the commercial site and erected or installed.

**Industrialized Housing.** A residential structure that is designed for the occupancy of one or more families, is constructed in one or more modules, or constructed using one or more modular components, built at a location other that the permanent site and is designed to be used as a permanent residential structure when the module or modular component is transported to the permanent site and erected or installed on a permanent foundation system.

**Insignia.** The approved form of certification issued by the authority having jurisdiction to the manufacturer to be attached to the modular building, modular component or panelized system indicating that it has been constructed to meet or exceed the applicable building code requirements.

**Manufacturer.** The entity responsible for the manufacturing of assemblies, panelized systems, modular buildings, or modular components.

**Manufacturing Plant.** The location other than the building site, at which modular buildings, modular components, modules, panels, or tiny houses are assembled or manufactured prior to transport to the final construction site.

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

**Modular Component.** A sub-assembly, subsystem, or combination of elements, including panelized systems, building shells or bathroom pods, for use as a part of a modular building that is not structurally independent, but is a part of structural, plumbing, mechanical, electrical, fire protection, or other systems affecting life safety.

**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: National Institute of Building Science).

**Open Construction.** A modular building, modular component, panelized system, or tiny house manufactured in such a manner that all portions can be readily inspected at the building site without disassembly, damage, or destruction thereof.

**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.

**Quality Control.** Controls and inspections implemented by the manufacturer, as applicable, to ensure the material provided and work performed meet the requirements of the approved construction documents and referenced standards applicable building codes.

**Registered Design Professional.** An individual who is registered or licensed to practice their design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed.

**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.

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

**Third-Party Inspector.** An approved person determined by applicable statutory requirements to be qualified by reason of experience, demonstrated reliability, and independence of judgment to inspect modular buildings, and portions thereof, for compliance with the construction documents, compliance control program, and applicable building code. A third-party inspector works under the direction of a third-party inspection agency.

**Tiny Houses.** A dwelling that is designed and constructed in accordance with the IRC with additional requirements as specified in IRC Appendix Q.

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