

What You Need to Know About the Role of Modular Construction

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Have you ever built a wall, castle, or other structure out of toy blocks or bricks? If so, you've dabbled in modular construction.

This ubiquitous construction method touches almost every aspect of our lives. Homes, schools, medical buildings, industrial processing centers, infrastructure support facilities, multi-story hotels and dormitories, bathroom pods, and more feature modular construction.

The pandemic, rising construction costs, and skilled labor shortages have highlighted the potential of modular construction as an alternative to conventional construction and project delivery.

Modular's promise of quality construction, budget-friendly products, and ability to meet accelerated project schedules is making headlines in design and construction journals. Could modular construction benefit your next project?

Modular Construction's Role in History

How did modular construction come about?

We can trace the roots of modular construction back to the Industrial Revolution in the 1800s when cafes on wheels served quick meals to factory workers. Then, as people bought cars and ventured farther from home on the newly constructed interstate roadway system, prefabricated diners served food to motorists and truck drivers.

In the fall of 1942, the U.S. Army Corps of Engineers acquired



vast tracts of land in remote areas of three states to advance the development of the atomic bomb. The Army quickly assembled modular buildings to house the teams supporting the project.

Architects experimented with suburban living at the 1967 World Expo by building a 12-story apartment out of 354 identical prefabricated concrete forms. The stacked cubes made 146 units of cost-effective housing that resulted in the population density of a modern urban apartment in a suburban setting. The stacked apartments were intended to be an affordable solution to housing, but their popularity drove prices up.

Walt Disney World® accomplishes a magical overnight transition from Halloween to Christmas with the help of modular construction. When the parks close on October 31, an

overnight crew unloads modular trailers of decorations and assembles a 65-foot-tall Christmas tree section-by-section. In fewer than seven hours, the crew transforms the park to attract visitors and drive revenue.

The COVID-19 pandemic put modular construction in the headlines. Pictures of testing stations made of shipping containers and hospitals pieced together in a matter of days demonstrated the efficiency of modular units.

As the execution of modular construction changes, its popularity grows, with more architecture and engineering firms offering modular building solutions. The American Institute of Architects' guide to off-site construction, "Design for Modular Construction," signals that architects find creativity, quality, and efficiency in modular construction.

Why Choose Modular Construction?

The advantages of modular construction include time, technology, and financing.

Time

Time is one of the most significant advantages of using modular construction and one of the most popular reasons to select it. Benefits include:

- » **Designers find solutions months ahead of schedule.** For revenue-intensive businesses, the results can be significant. The quicker the building is up and running, the faster the company makes revenue.
- » **Reduced site disturbance.** Busy sites that can't afford much downtime, such as schools, benefit from a condensed construction schedule. While the students wrap up the school year, an off-site factory builds the building. The contractor lays the foundation on the first day of summer break. Once the concrete cures, workers place the building on the foundation. By the fall, the school will be ready to accept students.
- » **Bringing new business to market ahead of the competition.** We saw modular's impact on the market when cell phones became popular. Mobile carriers rushed to get phones into consumers' hands more quickly than their competition. They leaned on the speed of modular

construction to expand cell site network areas in cities and towns throughout the country.

- » **Manufacturing schedules aren't affected by weather delays.** Structures built in a factory benefit from less weather-related downtime. Additionally, factories run two or three shifts, resulting in higher productivity than construction sites that follow a traditional workday schedule.

Technology

Technology allows you to meet design challenges when your client has unique project needs, such as building around a piece of large or heavy equipment. Benefits include:

- » **Patented solutions that create market exclusivity.** Modular construction creates new, unique marketable building solutions where traditional construction applications may be prohibitive.
- » **Factory construction that offers superior solutions over local or regional resources.** Recent labor and resource shortages prompted building manufacturers to stockpile inventory and have resources available, offering significant factory solutions.
- » **The ability to relocate modular buildings, offering clients business flexibility.** Clients who temporarily want to test a market put their building on leased land, then move it to another region if the market proves unsuccessful.

Financing

Financing is a broad topic, but significant depreciation opportunities exist, including:


- » **Product can be treated as property,** creating accelerated depreciation opportunities.
- » **Recoverable and relocatable assets enhance financial solutions.** Owners can separate the modular building from the foundation, allowing the building to be recovered or relocated to a new site.
- » **Operational leases offer rentals.** Since owners can consider the building a piece of equipment, it can be an operational lease. The lease presents an alternative project delivery if limited capital funding is available.

Points to Consider

Once an organization determines that modular construction is the right choice for its project, what are the next steps? There are many players in modular construction, including manufacturers, contractors, and design-builders. Determine the role each player will serve:

- » What do they sell?
- » Do they sell boxes from a factory?
- » Do they offer site development and foundations?
- » Will they set up on-site?
- » Do they offer financing or design services?

Compare vendors and solutions like you would for any other building project. Some modular builders provide complete turn-key services, while others offer only boxes. Have the builder provide a detailed scope and evaluate it compared to traditional construction methods. Consider the builder's history of performance, cost, and product quality.

From LEGO® creations to multi-story hotels, modular construction shapes the world around us and influences our daily lives. Modular construction's quality, budget friendliness, and ability to meet accelerated project schedules can make it an appealing alternative to traditional construction. 



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About the Article

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