

WHY BUILD MODULAR?



Modular Construction Presentation

Construct Canada

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Presenter

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What is Modular Construction

Modular construction is a process in which a building is constructed off-site, under controlled plant conditions, using the same materials and designing to the same codes and standards as conventionally built facilities – but in a lot less time

Buildings are produced in “modules” or a “kit of parts” that when put together on site, reflect the identical design intent and specifications of the most sophisticated site-built facility – without compromise.





Workforce housing built using modular construction.

Olympic athletic lodge built using modular construction. Now used for multi family housing.



Will add video



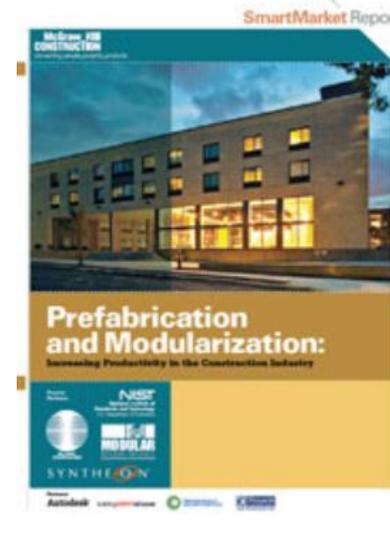
Better Construction and Quality Management

Building off site ensures **better construction quality management**. Materials that are delivered to the plant location are safely and securely stored. Manufacturing plants have stringent QA/QC and certification programs with independent inspection and testing protocols that promote superior quality of construction every step of the way.

Beyond quality management and improved completion time, modular construction offers numerous other benefits to owners. Removing approximately 50- 80% of the building construction activity from the site location significantly reduces site disruption, vehicular traffic and **improves overall safety and security**

[Dodge Market reports](#)

http://www.construction.com/market_research/FreeReport/PrefabSMR/



Improves Overall Safety and Security.

So, for schools, hospitals, public buildings or other active businesses, reducing on-site activity and thereby eliminating a large part of the ongoing construction hazards, is a tremendous advantage.



Sophistication that can Exceed Expectations

For architects and owners alike, modular construction companies today can work with all levels of design and construction **sophistication that can exceed expectations**, rivaling their conventional counterparts.

It is beneficial that when exploring the various project delivery methods, off-site construction is **chosen early in the design development process**, and the project built around that methodology, to avoid redesigning.

Most modular companies, however, can take a stick built design and create a modular version when required, so it's never too late to explore the possibilities!



GREENER

The factory-controlled process generates less waste, creates fewer site disturbances and allows for tighter construction.

- **Less Site Disturbance**

On-site traffic is greatly minimized from workers, equipment and suppliers.

- **Greater Flexibility and Reuse**

Modular buildings can be disassembled and the modules relocated or refurbished for new use, reducing the demand for raw materials and minimizing the amount of energy expended to create a building to meet the new need.

- **Less Material Waste**

When building in a factory, waste is eliminated by recycling materials, controlling inventory and protecting building materials.

- **Improved Air Quality**

Because the modular structure is substantially completed in a factory-controlled setting using dry materials, the potential for high levels of moisture being trapped in the new construction is eliminated

Community centre pointe-valaine , QC



One of the design features was to integrate reused precast concrete insulated wall panels from two Quebec Canadian Tire Stores. These panels cover 40% of exterior wall surfaces.



Smarter

Modular buildings are built with the same or better materials and to the same building codes and architectural specifications as traditional construction. Once assembled, they are virtually indistinguishable from their site-built counterparts.

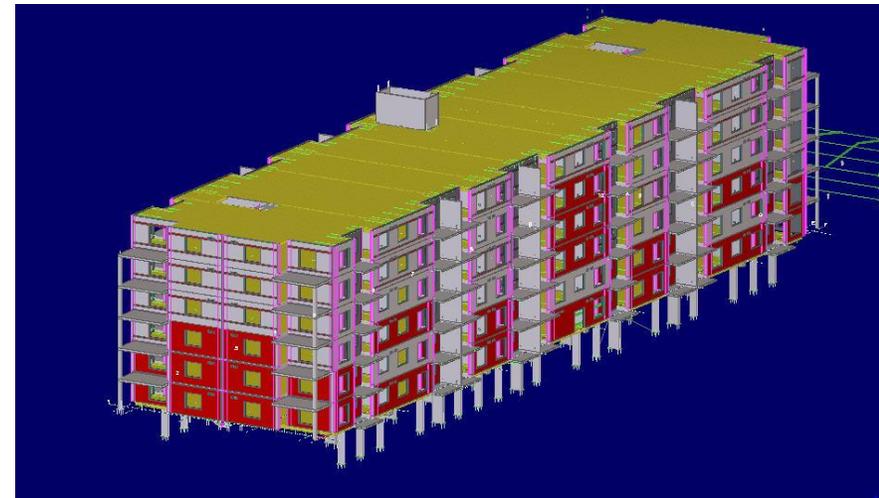
➤ Safer Construction

The indoor construction environment reduces the risks of accidents and related liabilities for workers.

➤ **Modular Construction** uses relies on advanced BIM for visualization to assess the energy performance and identify the most cost-effective efficiency measures. Modular Construction is ideal for this use of this technology where the construction process is already a collaboration of systems, materials and people—much like the software itself.

➤ Limitless Design Opportunities

Modular units may be designed to fit in with external aesthetics of any existing building and modular units, once assembled, are virtually indistinguishable from their site-built counterparts.



Faster Construction

Construction of modular building components occurs simultaneously with site work, allowing projects to be completed in less time of traditional construction

➤ **Reduced Construction Schedule**

Because construction of modular buildings can occur simultaneously with the site and foundation work, projects can be completed 30% to 50% sooner than traditional construction.

➤ **Elimination of Weather Delays**

60 - 90% of the construction is completed inside a factory, which mitigates the risk of weather delays. Buildings are occupied sooner, creating a faster return on investment.

➤ **Built to Code with Quality Materials**

Modular buildings are built to meet or exceed the same building codes and standards as site-built structures, and the same architect-specified materials used in conventionally constructed buildings are used in modular construction projects concrete and steel.



Different Types of Modular Construction

When talking about different kinds of Modular Construction there may be some confusion in regards to the terms used to discuss what kind of structure are being built. Prefab, Modular Unit and Modular Kit of Parts Construction are sometimes mistakenly used interchangeably, but they all mean different things.

Prefab

Short for Prefabricated, “Prefab” is a broad term that encompasses several different types of building. Technically, any building that has sections of the structure built in a factory and then assembled on site can fall under the “prefab” designation.

Both Modular Unit and Panel Built fall under the umbrella term of prefab, but just as different types of products can differ from each other, **Modular Unit** and **Modular Kit of Parts Construction** both qualify as prefab, but are still different.



Modular Unit Construction

As shown in the pictures - a full module being lowered in place by a crane. With modular unit construction, the structure is constructed in separate box-like modules which are then secured together to form a whole structure.

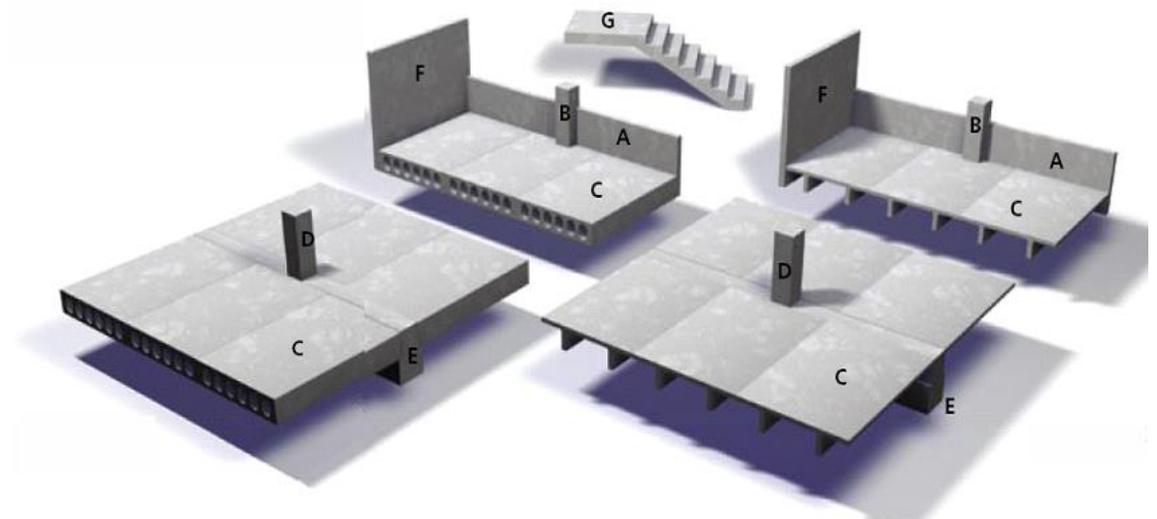
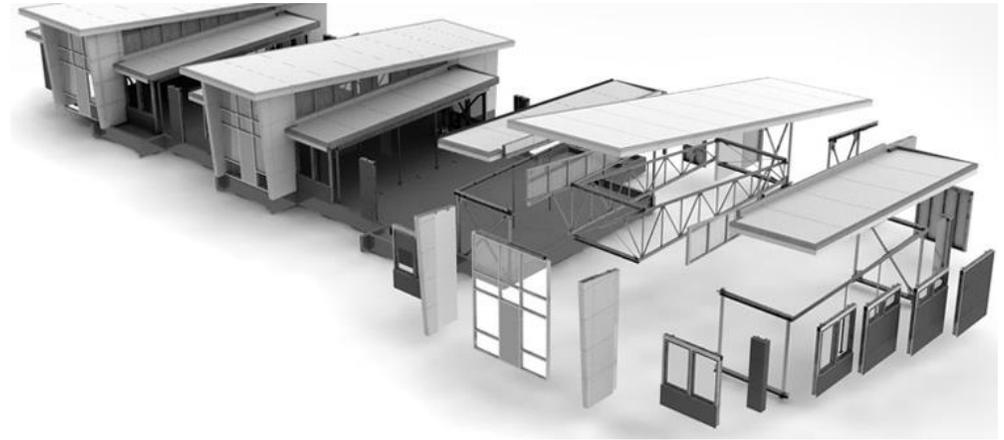
Since the modules have to be transported on the backs of flat-bed trucks over highways, they generally have to be no longer and wider than what the truck can haul or what the Transportation Ministry will allow.



Modular Kit of Parts Construction

Kit of Parts Construction - This type of construction can be useful in structures that don't work neatly as modules but can be built as structurally sound as other types of prefabricated building.

Commercial and institution prefabricated buildings are often done this way - as it allows for wide open spaces and high ceilings to accommodate HVAC systems. It is also much less expensive to transport a building in panels, columns and beams than in modules..



Precast Prestressed Concrete
Prefab, Modular Unit & Modular Kit of Parts
Construction