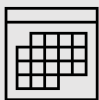






Factory-Built Versus Site-Built Multifamily Housing: Benefits and Challenges

Factory-built housing is primarily built inside of a factory and then assembled on site. Typically, factory-built projects are composed of standardized, repeatable designs which involve panels or modules. Factory-built housing construction methods are similar to mass production processes used for building cars or airplanes and are distinct from *site-built housing* construction methods in which nearly all building components are built on the construction site.

Benefits of Factory-Built Compared to Site-Built Multifamily Housing¹

From the viewpoint of builders and developers of multifamily housing projects, factory-built construction has certain advantages over site-built construction.

Topic Area	Site-Built Multifamily Housing	Factory-Built Multifamily Housing
Construction Time 	Requires an average of 16 to 18 months to build, excluding time required for inspection and approvals.	Construction time can be reduced by approximately 20 to 50 percent as certain aspects of the production process can occur simultaneously.
Community Considerations 	Most of the project is executed on the construction site, leading to noise and traffic disruptions.	As most of the structure is built in a factory, less time is spent on site and construction can be less disruptive to the surrounding community .
Labor Requirement 	Reliant on skilled labor that is often in short supply.	Automation in the factory and training unskilled workers on repetitive tasks can reduce reliance on skilled labor .
Worker Safety 	Workers often face extreme conditions that increase their risk of injury.	The factory environment and automation provide safer working conditions and lower potential liability .
Environmental Impact 	Construction waste accounts for approximately 30 percent of the total weight of building materials delivered to the site.	Overall, material waste is lower since fall off is recaptured in the manufacturing stream, or waste from one project can be used in another project in the factory.

Considerations

There are certain considerations when choosing factory-built housing.

¹ This information brief focuses on factory-built multifamily housing. The advantages of factory-built methods also apply to multistory commercial buildings.

Design Flexibility



Less flexibility in floorplan designs for factory-built multifamily housing compared to site-built.

- Difficult to make design changes once production begins.
- Standardized, repeatable components help keep costs low.
- Incorporating several different floor plans is possible but increases costs.



Best Practice: Early engagement between builders, architects, and manufacturers of factory-built housing is important to keep costs low and ensure designs are compatible with construction in a factory.

Community Regulations



Variations in building codes across states and state-specific construction material requirements can create challenges for using standardized, repeatable designs or standardized product lines.



Best Practice: Builders can work with the Quality Assurance departments of factory-built companies along with state-certified inspectors to ensure compliance with building codes earlier in the project.

Community Concerns



The public often has negative perceptions about factory-built housing, particularly that it is of low quality. **Pushback from the community can result in permitting and other delays to the project.**



Best Practice: Builders can educate the public and increase exposure to factory-built housing through social media posts and inviting community stakeholders to the factory and construction site to see the final product.

Transportation



State permitting fees and highway load-size regulations can add to transport costs for modules. Other factors like road conditions, narrow bridges, and landforms can pose challenges. Additionally, finished products are at risk of damage during transport.



Best Practice: Some companies minimize transport costs through careful route planning or adapting product design to enable units to be easily transported as a standard highway-legal load.

Staging and Storage



Modules need to be stored prior to assembly. Space is also needed for positioning, loading, unloading, and hoisting modules in place.



Best Practice: Careful scheduling can reduce the duration of storage. Have a secure staging area close to the construction site where modules can be stored.