

WHAT IS OFF-SITE CONSTRUCTION?

- Off-site construction involves the process of [planning](#), designing, fabricating, transporting and assembling building elements for rapid site assembly to a greater degree of finish than in traditional piecemeal on-site construction.
- Off-site building includes a range of materials, scales and systems, [digital software](#), methods of manufacture and fabrication, and innovations in social and technological integration.
- Off-site outputs include componentized, panelized, and modularized elements deployed in the service of structural, enclosure, service and interior partition systems.
- An optimizing strategy of off-site is to integrate these systems and supply chain through research, design, testing, and prototyping.

by Ryan E. Smith, University of Utah

Chair, [Off-Site Construction Council](#), [National Institute of Building Sciences](#)

One way to differentiate the various types of Off-Site Construction Methods

---Prefab

Sections of the structure are built in a factory then assembled on site. The process must adhere to state and federal building codes and undergo regular inspections.

Modular – The building is constructed of separate box-like modules which are transported and assembled onsite to form a whole. The modules are transported on flatbed trucks, craned into place and pieced together on-site. This could also include the use of “wet-cores” that can be blended with conventional on-site construction or panelized wall sections.

Relocatable – This is for temporary space needs including job site trailers, temporary classrooms, communication pods, and showrooms. More recently cities are looking to use modular construction to provide short-term housing solutions for people experiencing homelessness. Units are set on underutilized property and can be relocated after initial use.

Permanent – These can be multi-story residential, government buildings, hospitals and healthcare facilities, schools, and hotels. There is increasing interest in building multi-family residential buildings where feasible using modular construction.

Panel Built – This is accomplished by setting the floor structure and then separately placing each section of wall atop it. The wall panels can be both structural enclosing walls and non-load bearing partitions. This system is common in commercial prefabricated buildings as it allows for wide open spaces and high ceilings. “Panelization” is typically done in factories but some builders have set up the ability to panelize wall sections near the installation site. Sometimes special wall panels comprised of “MEPS” are used.

---Manufactured

This type of off-site construction is built on a steel frame, shipped on its own wheels, and then set on a concrete foundation or pier blocks. In some cases, the wheels that got the house to the build site aren't even removed, just covered up with side skirting. These may or may not be located in “manufactured housing communities” which were once sometimes called mobile home parks.