

Builder

Safe Haven

Construction methods that protect houses and their owners in violent storms

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Farm Out A Boston firm known for designing traditionally styled custom homes was part of the team that built ART House in Charlotte, Vt.



Philip Jensen-Carter

PREFAB GROWS UP

The latest factory-built housing is better than its predecessors and many designs boast traditional good looks. Prefab is eco-smart and time efficient. Is it right for your target market? By Barbara Ballinger

Forward-thinking builders have long sought ways to improve the traditional stick-built, on-site process. Enter prefab, whose most recent iterations offer the latest in quality control, speedy delivery, innovative materials, and sustainability—a long way from its early 1900s roots of

Sears, Roebuck & Co. mail order.

Prefab has undergone fits and starts. Resistance has come in a litany of perceptions, from inferior quality that conjures visions of mobile homes to the belief that standardized designs leave little or no room for customization to fear that workers' jobs will be axed. But Frank Baker pushes back. Thirty years ago, after working for General Motors, Baker started a company that makes SIPs for prefab houses and then founded Insulspan in Blissfield, Mich.

"The challenge is that a prefab house requires greater advance planning since you can't make decisions on the fly on a building site," Baker says. "You need to be much better disciplined ahead of time." But the upside, he adds, is that once that's done, it's far easier to execute the house. In addition, jobs aren't lost, just moved inside the factory.

"For years we've been saying that nobody would think to build a car on a driveway, so

why would builders construct a house that way?" asks Donna Peak, executive director, Building Systems Council of the NAHB.

Newer prefab construction techniques use precut parts, panelized members, concrete forms, and modules. Yet the number of U.S. homes assembled this way remains small—about 447,000, or 2 percent of the country's new single-family housing starts, according to the U.S. Department of Commerce. Buyers are attracted by a host of reasons, such as competitive initial prices helped by government and utility incentives and policies for renewable energy, and by lower operating expenses resulting from a tighter envelope. Some favor how factory

assembly reduces waste, impacts the environment less, and causes fewer construction delays. Others like the dramatic design creativity—even circular homes, which manufacturer Deltec Homes produces. Buyers of Lake|Flato's modular Porch House designs have found three prime reasons appealing: quality, attractiveness, and consistency, says architect Ted Flato, who adds, "Every site deserves a different arrangement of rooms and outdoor spaces, which are equally important."

Prefab may represent the future, but it's important to be realistic about the target homeowner market. If you're new to the category—or are contemplating a deeper dive—

understand that no single prefab option represents a one-size-fits-all, budget solution for everyone. Yet with so many options available, Baker sees no buying segment that couldn't be satisfied as long as you do your homework on which product works best.

Boston architect J.B. Clancy, a principal at Albert, Righter & Tittmann Architects, has worked on modular houses and agrees. He adds two other prefab pluses: A certain amount of risk is removed from the building process, and it's easier to keep to a budget because the fixed costs are upfront rather than during on-site construction.

The following examples may help you decide if getting into prefab is right for you.

Modular Times ART House is Vermont's first certified Passive House, and the first Passive House in the U.S. for Habitat for Humanity.





Building Blocks The modular boxes that make up the ART House are placed on the foundation, and then its roof panels are assembled.



PROJECT: Art House, Charlotte, Vt.

CONSTRUCTION METHOD: Modular

PROS: A tight envelope in a harsh climate; a shortened construction schedule; and customized options are available.

CONS: More organization is required before breaking ground; module size is limited and depends on state transportation requirements.

TIME FRAME, ORDER TO DELIVERY: About six months (built with volunteers, this house took eight months).

ENERGY SMARTS: Triple-glazed windows (few are north-facing); solar thermal system for hot water; heat-recovery ventilation (HRV) system; Energy Star appliances, compact fluorescents, and LEDs; high levels of insulation and air-tight construction.

SIZE: 1,250 square feet

COST: Market rate would be \$175 to \$200 per square foot or \$240,000 to \$275,000, minus donated materials, labor, and land.

Teamwork can yield innovative results, as shown by architect J.B. Clancy of Albert, Righter & Tittmann Architects, energy analyst Peter Schneider of Efficiency Vermont, and Green Mountain Habitat for Humanity. With help from modular builder Preferred Building Systems, the result was Vermont's first certified Passive House and Habitat's first such home in the U.S. "There aren't many modular builders constructing high-performance homes in the Northeast, one of the harshest environments, so this became a challenge worth pursuing," Schneider says. "We also wanted to demonstrate that the quality can be as good as custom, stick-built, but at lesser cost due to the modules." The design uses 6 inches of rigid foam insulation on outside walls, 5 1/2 inches of cellulose on inside walls,

and 1/2-inch sheathing for a total of 12 inches—double the average of a modular or site-built home, Clancy says. To fit the Vermont vernacular, Clancy replicated a farmhouse. "It didn't need to wear its greenness on its sleeve," he says. Modular cost projections exceeded the typical Habitat budget, so \$50,000 was raised through a grant from Vermont Community Foundation's High Meadows Fund. Preferred Building Systems has since built seven such homes in New England; this one sold 30 days after completion.

Philip Jensen-Carter, J.B. Clancy (construction photos)