



[Home](#) > [Advice Tailored for You](#) > [Building/Remodeling](#) > [Content](#)

The Benefits of Wood Frame Construction

Building/Remodeling Industry Trends

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In the classic children's tale of the three little pigs, three brothers build three different houses—one made of straw, one of sticks and one of bricks. Bricks, the story goes, were so strong and sturdy that they were the only material of the three that protected the pigs.

In the real world, however, it's the sticks that are the best choice for many modern-day builders, according to John "Buddy" Showalter, director of technical media for the American Wood Council, a product group subsidiary of the American Forest & Paper Association that develops international standards for wood design and construction.

"For centuries, wood has been valued widely for its strength, and with the development of engineered wood products, it is more practical and useful than ever," Showalter says. "Wood provides structural safety that is unmatched by other material choices. When built according to building codes and industry standards, wood structures give resistance against hurricane winds and seismic loads." This protective quality is just one reason Showalter and other wood advocates recommend revisiting and reconsidering wood as a primary residential—and even commercial—building material.

Why wood?

The benefits of wood frame construction are many, according to Duane Schantz, North Central regional director for WoodWorks, an initiative of the Wood Products Council, a cooperative venture of wood associations, research organizations and government agencies that promotes the use of wood in non-residential construction.

"Wood structures are a good choice," he says, "because wood is flexible, relatively inexpensive, efficient and really easy to use."

Relative to alternative materials like light-gage steel, masonry and composites, wood's benefits include:

- **Affordability:** Because it's readily available—and because there are many different types of wood at many different price points—wood typically is a low-cost, high-value building material, according to Schantz, who adds that prefabricated component systems are growing in popularity and make wood frame construction even more affordable and efficient.
- **Availability:** Both traditional and engineered wood products are easy to find, according to Showalter, and are therefore more accessible than other materials.
- **Flexibility:** Unlike steel or stone, which typically must be pre-ordered to exacting specifications, wood can be adjusted and fitted on site, says Schantz, making it an ideal choice for projects that might demand last-minute blueprint changes.
- **Strength:** Thanks to recent innovations in wood engineering codes and standards—which have produced products like I-joists, trusses and structural composite lumber—Showalter says wood can withstand high wind and large earthquakes. In fact, because modern products are so strong, some engineers are even starting to use wood for residential high-rises and commercial skyscrapers, according to Schantz.

“Wood can also add beauty and sophistication to any home,” Showalter says as an added benefit. “With a wide variety of American-grown species and new innovative products like I-joists, trusses and structural composite lumber, designers and builders are not limited to traditional styles, but can explore their creativity with modern design.”

Sustainable splinters

Wood frame construction isn't just affordable, accessible and flexible. It's also sustainable, says Showalter.

“Wood is renewable, reusable and recyclable,” he says. “The manufacturing for wood products uses less energy and produces far less air and water pollution than processes for alternatives like steel and concrete. Healthy, growing forests also absorb more carbon dioxide than is released in the manufacturing process.”

While it's good for the environment, wood's equally good for homeowners, according to Schantz, who suggests wood frame homes may be more comfortable to live in and less expensive to heat. “There's an R-value to wood that makes it an excellent insulator compared to alternatives,” he says. “Also, we know that wood performs well in all climates and that it acts as a natural humidifier; when it's really dry out, it tends to release moisture into the building, and when it's wet out it tends to absorb moisture.”

What you need to know

In order to maximize the benefits of wood frame construction, builders must work collaboratively with code officials and manufacturers, says Showalter.

“Follow manufacturer recommendations and follow the building code,” he says, stressing that local building codes prescribe where wood can be used as well as the maximum square footage and number of stories that can be built with wood. “If not handled properly, wood products can be damaged prior to or during construction. Manufacturers have specific instructions for handling and storage. If these are ignored, damaged products either have to be replaced or repaired on site.”

Make sure that trade groups pay attention, too, as manufacturers often issue specific guidelines on where—and where not—to drill holes or notch wood members for utilities.

Finally, Schantz suggests, keep education top of mind and consider enrolling in the wood construction seminars or classes offered by many industry associations. Although wood is an age-old building material, it's a mistake to think you know everything about it.

“Keep your education ear open,” he says, “because there are lots of new wood products and techniques out there now, and learning about them can be beneficial to everybody.”