

Building Better Homes



Washington builder Scott Homes improves quality and profitability with SIP construction

For over 25 years, Scott Homes has been building energy-efficient and award winning homes in Olympia, Washington. In 2009, Scott Homes was awarded the Energy Value Housing Award for Builder of the Year by the U.S. Department of Energy. This follows other accolades such as Washington's Small Builder of the Year award from Energy Star Homes Northwest and Best Builder for Small Home Design from the State of Washington's Built Green program.



For owner Scott Bergford, the awards recognize simple principles that are the foundation of his business: superior customer service, and quality, energy-efficient construction with structural insulated panels (SIPs). Building with SIPs has elevated Scott Homes above their competitors by reducing construction costs, eliminating callbacks, and simplifying the construction of high performance homes.

Cutting Costs with SIP Construction

In 1996, a homeowner asked Bergford to build a house with using SIPs. Bergford had already been building energy-efficient homes for over 10 years and was skeptical of the product's claims.

"At first, I did not believe the literature," said Bergford. "They said that SIPs would give me a significantly more energy-efficient house, that it was stronger than 2x6 construction, and it could be built faster."

On the first home, Bergford did not experience the labor savings touted by other SIP builders. He had also run into issues with his subcontractors, who were unfamiliar with the building system.



SIPs arrive at the jobsite with window openings and other features prefabricated. (Above) Wall panels are notched to accept a glulam ridge beam that supports the roof.



“But the energy efficiency results were undeniable,” said Bergford. “The house performed better than we could imagine and I have been building 100 percent with SIPs ever since.”

After learning the tips and techniques for SIP installation, Bergford’s crews were quickly able to start shaving off framing time with prefabricated SIPs. SIPs are available in sizes as large as 8’ x 24’ with all the window and door openings custom cut to the design of the home.

Bergford also optimized his home designs for SIP construction and worked on educating his subcontractors on the system. It wasn’t long before he reached his goal of drying in a 1734 sq. ft. one-and-a-half-story bungalow in just five days.

The productivity benefits of SIPs extend beyond the exterior shell of the home. Bergford found that electricians can wire SIP homes faster, a claim that was verified by a third party study from R.S. Means Business Solutions. The study found that electricians can wire a SIP home 11 percent faster than a wood framed home, and builders can reduce framing time by 55 percent. Trim work, window and door installation all go faster because SIPs are perfectly straight and true.

One of the key cost-saving benefits for Scott Homes has been a dramatic reduction in callbacks on SIP homes.

“Since I started building with SIPs, my callbacks have dropped 80 percent,” says Bergford. “SIPs don’t warp or shrink, and when they are correctly installed, there is no way for moisture to get into the walls or roof.”



Scott Homes’ callbacks dropped 80 percent when they switched to SIP construction. Homes can be dried in faster, limiting the amount of time building materials are exposed to the elements



Unmatched Performance

For Scott Homes, the real advantage of SIP construction is its contribution towards a green, high performance home. Bergford builds all his homes with SIPs and radiant heating. His customers are routinely amazed at how little it costs to heat his homes.

“All my homes qualify for the federal \$2,000 builder tax credit,” said Bergford. “My margins are higher because people are willing to pay more for an energy-efficient home.”

Bergford’s award winning entry into the Energy Value Housing Awards was a 1,930 sq. ft. craftsman style home with a HERS Index of 55, nearly 50 percent more energy efficient than a code-built home. While many homes reach this level with lots of expensive technology, Bergford accomplishes this with only a solid SIP building envelope, radiant heating, and efficient appliances.

In his quest to improve the cost and efficiency of his homes, Bergford has tried and priced a number of different building envelope technologies, including spray polyurethane foam and insulated concrete forms (ICFs).

“To make a 2x6 wall as airtight and well insulated as a SIP wall, I had to spray closed cell foam and sheet the exterior with ½” foam sheathing,” said Bergford. “The SIP wall saved us two weeks of time, the insulation did not have to be inspected, and it cost less. There is no way I can build as good of a house as cheaply as I can using SIPs.”



(Left) Panels as large as 8'x24' make roof installation quick and easy. (Above) Using radiant heating and a SIP building envelope enables Scott Homes to routinely build homes nearly 50 percent more energy efficient than the average home.

