

# Whole Tree Construction Creates Unique Interiors

Ronald Gundersen and his company, Whole Trees Architecture, uses whole trees for everything from structural components to interior decorating, including stairs, railings and exposed columns.

"We work on homes, as well as commercial buildings where whole trees compete with concrete and steel," explains Amelia Swan, co-owner. "As steel and concrete prices go up and the ability to import materials becomes more challenging, we think people will see that whole tree building makes sense economically."

The USDA Forest Products Research Laboratory has shown that whole trees are 50 percent stronger in axial loading and bending than milled lumber of comparable size. Milling, they found, removes the strongest and outermost layers of the tree that are pre-tensioned to resist wind shear.

The company is headquartered in a steep-sided, tree-filled valley in southwestern Wisconsin. They do their planning and consulting from living quarters and office areas that were built with whole trees. They also prepare and harvest trees from the 140-acre woodlot for use in clients' buildings. They have a computerized inventory of more than 1,000 trees that are ready for harvest.

"The software stores length, base and top diameter, potential as single or double pieces, natural curves or arches as well as the GPS location of the tree," says Swan. "We can pull up photos of the trees as well."

Once a client has approved a design, trees will be selected from the inventory. Selected trees will already have been girdled, bark peeled and allowed to dry in place in the woods for 6 months or more. In that time, a tree will lose up to 50 percent of its weight in water, making it easier and less expensive

to move. If necessary, trees may also be dried in a simple solar kiln.

"The slower the tree dries out, the less checking or longitudinal cracking that occurs," explains Swan. "It has no effect on the structural integrity or strength of the tree, only on its appearance."

Even green trees can be used in building, adds Swan. As they dry in place, they will shrink in diameter but not to any noticeable degree in length.

Whole tree construction costs around \$125/sq. ft. at the low end of custom construction, says Swan. By comparison, a conventional stick built home would be less, but a post and beam home starts at \$145/sq. ft. and moves up to \$180 or more.

"Because we are farm-based and harvest our own trees, we can keep our overhead lower," she says.

Swan explains that the company operates at multiple levels depending on a client's needs. They can develop plans, provide trees, act as general contractors, or do all these. Clients may want local trees on site to be used, and Gundersen's crew will harvest and prep them. Other clients prefer to use local general contractors, and Gundersen acts as a remote consultant.

"We have prospective clients who are interested in us preparing pre-fabricated buildings that can be reassembled on site," says Swan. "We also pre-fabricate components, such as stairs and balcony railings out of branches."

With the Midwest and the West facing the loss of millions of trees to insect infestation alone, Swan encourages people to consider using the dead and dying trees in construction when possible. "We wish we could work fast enough to salvage some of what is going to be lost," she says. "The way a tree dies doesn't



Whole Tree Architecture uses tree trunks for everything from structural components (above) to interior decorating, including stairs, railings and exposed columns.



affect structural integrity. It's only a question of how much rot has occurred since it died."

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## Boom Hoist Made From Cottonwood Trees

Farming in rural Alaska, sometimes you have to make do with materials you have at hand. That's what Trent and Christine Sexton did when they needed a lift boom to build a storage shed.

The Sexton's made a simple lift hoist with two 20-ft. poles cut from cottonwood trees and mounted them in the back of a pickup. The poles butt up tightly against the wheel wells in the box where they're chained in place. A 3/8-in. cable runs from the top of the poles to the front of the pickup. A block and tackle attached to the top of the poles does the lifting.

They used the boom hoist to lift roof timbers made from whole cottonwood trees.

Contact: FARM SHOW Followup, Trent & Christine Sexton, P.O. Box 143433, Anchorage, Alaska 99514 (ph 907 748-4341).



The Sextons used hoists to set "whole tree rafters" in place.

Hooking up hydraulic hoses is an easier job with "pistol grip" handles, which attach between the coupler and the end of each line.



## "Pistol Grip" Hydraulic Hose Handles

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"EZ Hookers" install in-line and are color coded in six different colors. They simply attach between the coupler and the end of each line.

"They take all the hassle out of dealing with hydraulic hoses," says inventor Donald Baucom, Florala, Ala. "I came up with the idea because I was frustrated when hooking up and changing implements. Oil-covered lines would cause my hands to slip; lines were hooked up backward; lines to different cylinders were hooked together; or lines were prematurely showing wear and tear. I had to make multiple trips from the connections to the tractor's controls.

"Even with oil-covered lines, the EZ Hooker handles provide you with a good grip to connect or disconnect," says Baucom.

"You can't hook up the hoses backward any more because the handles are labeled and color coded. Also, the handles eliminate the bend in the hose where it comes out of the tractor's outlet, so you won't have to worry



Handles install in-line and are color-coded in 6 different colors.

about premature wear on the hose any more."

EZ Hookers are sold in sets of two. They sell for \$29.95 per set plus \$4.95 S&H. Contact: FARM SHOW Followup, Baucom Enterprises, LLC, 6334 Bull Head Lane, Florala, Ala. 36442 (ph 334 858-2111; baucomenterprises@yahoo.com; www.ezhookers.com).