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# The Practical Art of Repurposing

Bartered, gifted, and salvaged resources make a garden shed to be proud of.

By Tom Barchacky

In the spring of 2006 my wife and I decided to build a garden shed. After studying a few do-it-yourself publications, we found a paperback book—*Sheds: The Do-It-Yourself Guide for Backyard Builders*—by David and Jeanie Stiles that included a design in which the walls were built of 4"-long logs that were stacked like cordwood and mortared together. It said that the technique, known as stackwood, or cordwood masonry construction, typically uses softwoods

such as cedar as the main building material.

Later that July, we were talking to our neighbor about the project. He owns a tree service and remarked that he was cutting down a bunch of cedar trees the next day. He said I could have them in exchange for a few hours of my labor.

It was at this point that I started down the path of acquiring used building materials and repurposing them at a fraction of their cost new.

## One Good Find Begets Another

Once we got going, it was hard to stop. In September my sister and brother-in-law said they had a number of old salvaged barn beams that I could have as a Christmas present. The 8 x 8 beams could be used for all of the vertical posts as well as for the horizontal beams that tie the posts together. Shortly thereafter, my wife happened to find a pile of discarded lumber at the curb of a home where

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## The Art of Repurposing

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they'd torn out a wooden deck. The horizontal decking was shot, but the 2 x 10 joists were in perfect condition. I removed the screws and nails and ripped them lengthwise to produce 2 x 6s for the roof trusses and 2 x 4s for the interior divider wall.

And so it went. We began to drive different routes as we went to work and ran errands to increase our chances of new finds. Our efforts did not go unrewarded—here's a short list of the other stuff we found or were given:

- A large front window, found at a neighbor's curb while we were visiting family in another city.

- An entry door, given to us by Mary's former boss. I cut the arch and hole for the glass.

- A side door, found standing in a

rural roadside ditch along with a sign that said "Free."

- More 2 x 10s, given to us by my brother-in-law, who also found a discarded deck.

- 3 x 5 landscaping timbers, found in the local landfill and used to build a hoisting derrick.

- Windows for the rear and side walls, found on the curb.

- A 12-foot ladder, discarded at the curb.

- Hinges, doorknobs, latches, and a sink, all recycled from the local rehab store.

- Laminate countertops for the potting area, purchased at a local seconds outlet.

- Furring strips for windows and doors, found in "giveaway box" at a local cabinet shop.

- 4 x 4 x 8s, salvaged from a discarded deck.

- 12" x 12" sections of concrete used as a floor for outside storage, found at the curb.

- 3 tons of used brick, recovered from the landfill.

In March of 2007 my brother-in-law went online to learn more about cordwood construction and found the Web page, [www.daycreek.com/flatau](http://www.daycreek.com/flatau), of cordwood builder Richard Flatau in northern Wisconsin. I ended up buying one of his books and later called him with a few questions. My wife and I then visited him and his wife, Becky, at an open house that they held later in the year.

Beams and roof trusses were hoisted into place with the assistance of a 19'-tall derrick constructed from a come-along and an A-frame on a rolling platform.

With Richard's guidance I drew up the plans as required by our local zoning office. The plans ended up being fairly well detailed, which encouraged the building inspector to request very few alterations. He was fine with the post-and-beam construction and all aspects of using mortared cordwood for wall infill. The fact that we planned a concrete floor also helped in his approval.

We'd decided against a simple dirt floor from the start, but were considering a wood floor over sleepers until I became uneasy with the thought of rotting wood and a ready-made critter habitat under our feet. I'd never worked with concrete before, so I asked a friend and his wife to show us how to do it. I bought a small 3.5-cubic-foot mixer, and it still ended up taking me two months to finish the floor, though I lost ten pounds in the process. I then asked another friend to show me how to lay concrete blocks around the floor perimeter to support the first course of logs. This would prevent rainwater from splashing onto the lowest logs and eventually rotting them.

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### Timber Framing, Sort Of

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All the old barn beams had to be power-washed to remove decades of dirt and manure. Some of the beams were worn on the sides where cows had rubbed against them while being milked. To keep the beams from deteriorating, I applied a penetrating preservative and then a clear UV sealant. The vertical posts are held in position with 1/2" x 18" rebar inserted 12" into the bottom of the post. The remaining 6" of rebar protrudes into the 8"-deep cavity of the cement block, and the cavity is then filled with cement.

This layout offers a very clean look. The horizontal beams are attached to each other at the corners with lap joints, which I cut with a chain saw. An electric chain saw works best because it runs slowly, vibrates less, and allows a more precise cut. I placed a mirror on the opposite side of the beam so that I could see where I was cutting on the back side as well as on the front side. The beams were bolted to each other



and to the vertical posts with countersunk 1/2" x 8" lag screws, which helps maintain a rustic appearance.

To erect the beams and the roof trusses, I built a 19'-tall derrick so I could lift the 200-pound beams when no one was available to help. The derrick cost about \$60, which was for the come-along, casters, and hardware. I got the wood free at the landfill.

I built the roof trusses at a 9/12 pitch, which keeps snow mass from piling up too high. A lower snow load meant that bracing wasn't required on the inside of the trusses, which allows for a wide open loft with considerable storage. The shed is 16' x 16' with an 18' joist at the bottom of the truss to allow for a 12" overhang along the front and rear walls. To make this joist, I had to overlap two 10' 2 x 6s and bolt them together. I then ran a support wall down the center of the shed with two 2 x 4 plates at the top to support the spliced sections. The loft is almost 6' high along the ridgeline, which allowed me to install a set of loft doors in the gable. I plan to extend a 4 x 4 about 2' out past the doors and hang a pulley from it to help lift heavier items into the loft.

By the end of 2007 we had the main frame members up as well as cedar shakes on the front side of the roof. The roof was finished in April of 2008. Another brother-in-law helped me cut notches to fit the 6 x 6 crossbeams in the walls to hold up the windows, at which point we were able to begin the electrical work.

### "Formed" Cordwood

In August 2008 we began laying and mortaring the cedar logs for the walls, with help from family and friends. Instead of using a mason's line to keep the walls straight, we used long boards screwed to the vertical support posts to keep the back side of the logs perfectly flush as we laid the mortar. Using the board is much faster than using a mason's line because we didn't have to check to see if the log was lined up with the string. As long as the log was pressed up against the board we knew it was straight. The board also keeps the mortar from falling out the



other side as the logs are laid into the mortar bed.

We followed Richard's 3-3-1-1 (sand-sawdust-portland cement-hydrated lime) recipe for mortar, and it worked perfectly. The mortar consistency was thick enough to allow us to mortar an arch above the door without using permanent boards underneath to hold the mortar in place. This meant that the underside of the logs could be exposed and not completely covered with mortar, yielding a more attractive look. I soaked and bent a 1/4"-thick furring strip and nailed it to the top of the door to hold the logs in place until the mortar set. To hold up the other end of the 8" logs and keep them level, I nailed a second bent strip to the 8" x 8" vertical posts that framed the door.

We finished the shed this summer, culminating four summers of work on the project. In retrospect I could have hired people to pour the concrete and have it done in less than a week, but it would have cost four times as much and I wouldn't have lost those ten pounds. I also could have chosen to use new materials for the frame and saved myself months of work in cleaning and preparing the barn beams and pulling out screws and nails to ready the deck boards for ripping, thus doubling the yield.

But I've reminded myself that part

A stop board placed on the outside of post-and-beam frame makes it easy to maintain a flush finish; in addition it acts as a form for the exterior mortar joints.

of our purpose was to repurpose, and time is an asset as valuable as money. What I saved on new purchases and other people's labor essentially bought me a cement mixer, a power washer, and an electric chain saw that, like the shed, will be used for many years to come. 🐾

*Richard Flatau's newest book, Cordwood Construction: A Log End View (2009) is available for \$22 plus \$2 shipping and handling in the U.S. (\$4 to Canada) online at [www.daycreek.com/flatau](http://www.daycreek.com/flatau). Also available for \$15 plus \$2 shipping and handling is his latest full-color book, Cordwood Cabin: Best Practices, which details the building of the Cordwood Education Center in Merrill, Wisconsin. The Flataus are teaching a hands-on cordwood workshop near Asheville, North Carolina, October 10-12, 2009. For information on the workshop go to [www.daycreek.com](http://www.daycreek.com), or for further questions contact Richard Flatau at W4837 Schulz Spur Dr., Merrill, WI 54452; 715-212-2870, or [Flato@aol.com](mailto:Flato@aol.com).*