CORDWOOD COTTAGES

For the DIY'er with access to softwood, this old-school building technique is one way to live the debt-free dream life.

BY RICHARD & BECKY FLATAU

A very cold and snowy Wisconsin winter provided us with the time and motivation (high heating bills) to begin researching and planning our very own natural, hand-built, mortgage-free home. We promised ourselves that by the next winter our family would be well on its way to completing this dream. It was all part of a master plan we'd been mulling over that would allow us to move into our own home free and clear of any mortgage. (We had taken out a mortgage on our home in town and chaffed at the monthly payments and disliked the feeling of indebtedness.) The capital would come from our savings, our paychecks and the equity from the sale of our mortgaged home in the city.

We had purchased 40 acres of beautiful glaciated forest not far from town. Fortunately, our property already had a clearing for a garden and an 85-foot drilled well, complete with a hand pump. For years we had been busy planting fruit trees, edible perennials and tree seedlings in anticipation of moving to our new homestead.

Cordwood Building

During that long winter, we had been poring over books and magazines about building homes of log, stone, cob, rammed earth, earthbag, or straw bale, as well as learning about earth-sheltered homes with active and passive solar designs, but any way we figured it, none of those construction methods would meet our goal of building an energy-efficient, natural home of sustainable materials that would allow us to become mortgage-free. However, we read a magazine article about an unknown (to us) log cabin building technique called "cordwood construction" that really grabbed our attention.

We learned that cordwood had been used for over a century (and later we found out that it had originated in three different areas, one of them being Wisconsin). For the uninitiated, cordwood construction is a method of building a wall by stacking softwood logs measuring 12 to 24 inches in length firewood style, using a mortar mixture to hold them together at the ends, and insulating the center cavity with sawdust and lime. Handling small pieces of log ends seemed a significant advantage since it did not require heavy equipment.

PHOTOS COURTESY OF CORDWOOD CONSTRUCTION

Richard and Becky Flatau, with their golden retriever, Summer. They were coordinators of the volunteer-built Cordwood Center. Community members and business owners donated time and materials to this project.

Above: The Flatau's cordwood home in lovely Wisconsin. The first floor is cordwood construction while the second is what Richard describes as "space gaining, room-in-the-attic truss."

Right: The kitchen and dining area at the Flatau's. They often cook with a Home Comfort Wood Cookstove.

The realization dawned on us that by using cordwood construction we could finally build a home that met our goals. Wasting no time that winter, we gathered previously harvested cedar, and peeled, cut and stacked it in a single row to dry. In the spring we poured our frost-protected shallow foundation on top of a Frank Lloyd Wright rubble trench system. Simple post-and-beam framing with cedar posts commenced in June.

The cordwood infill took two months of sweat-equity labor during July and August. Then the woodstove chimney was erected, the room-in-the-attic roof trusses hammered in place, and the doors and windows were installed. By the first snows of winter, we were enclosed and subsequently worked every weekend to finish the interior. Being novices, we hired professionals when we were "in over our heads" for the plumbing, electrical, foundation and trusses. We were able to do the framing, the cordwood infill, all the interior rooms, walls and ceilings, cabinets and plumbing fixtures.

Huge Savings

With precise planning, hard work and patience, we were able to "shell up" our home for $5,000 and finish it for another $10,000, which we made from the sale of our home in town. So, $15,000 coupled with the sweat equity of our labor enabled us to move into

Advantages of the Mortgage-Free Life

All the advantages of being mortgage-free were not entirely clear to us when we began, but as the years rolled by, we were amazed by how much this affected the quality of our lives.

- There was no monthly mortgage payment to make.
- We held the deed to our home.
- We did not require two incomes to live in our home.
- One of us could stay home and run the homestead.
- We had more time to grow our own food and prepare it for storage.
- We had the opportunity to care for our aging parents.
- We had the option to engage in volunteer activities in the community.
- We were able to provide educational activities for our children.

The Flataus were two of the many volunteers involved in building the Cordwood Contruction Center in Merrill, Wisconsin, a classroom, nature center and warming shelter. It was designed as a model of renewable energy.

our mortgage-free cordwood home in October of 1980. This figure also included professional labor for excavation, the foundation, pouring the concrete slab, truss placement (a crane and a carpenter), a 200-amp electrical installation and the tying of all the wires and plumbing lines. (Costs are estimated using 1980 dollars, about $40-$45,000 today.)

In addition to saving money, cordwood is also aesthetically pleasing, energy-efficient and sustainable. If you have access to softwood, want to work hard and have the desire and patience to plan your own building project, this may be a technique for you to consider. The major savings come from the wall itself. If you have ready access to softwood, and can peel, split and dry it, you have successfully acquired the basic building blocks of your home. Once a cordwood wall is built, it is finished both inside and out.

With an eye to bargains and sales, we built our cordwood home for $15 per square foot or $40-$45 today. An average home now costs upwards of $100 per square foot. If you can recycle, reuse, repurpose and have basic building skills (Habitat for Humanity is a great place to start), you can build your own home for even less.

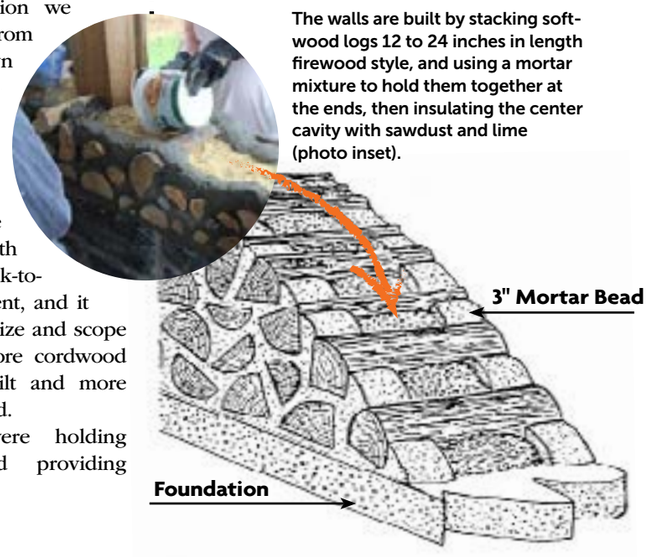
Birth Of A Business

After moving into our home and enjoying the beauty and bounty of living on 40 forested acres in the gorgeous Northwoods of Wisconsin, we decided to share our story in *Mother Earth News*. People from all over the country found our driveway and came down for a "look-see." While we enjoyed all the interest, we found we were using many of our productive hours writing the details of how we built the house.

A wise person once said, "Invention is the mother of necessity," and in order to compile all the information we had gleaned from building our own home, we decided to write a book. *Cordwood Construction: A Log End View* became a hot seller with the 1980s back-to-the-land movement, and it rapidly grew in size and scope as more and more cordwood homes were built and more pages were added.

Soon we were holding workshops and providing consultation in person and over the phone, and have been doing so ever since. We were able to retire from teaching and organized and hosted the 2005 Cordwood Conference in Merrill, Wisconsin, where we helped develop and edit a much needed compilation of testing data on cordwood. *Cordwood and the Code: A Building Permit Guide* was a hit with anyone who wanted a detailed, authoritative document to present to code officials.

Cordwood Wall



The walls are built by stacking softwood logs 12 to 24 inches in length firewood style, and using a mortar mixture to hold them together at the ends, then insulating the center cavity with sawdust and lime (photo inset).

"If you have ready access to softwood, and can peel, split and dry it, you have successfully acquired the basic building blocks of your home."

Left: When the Barchackys of Green Bay, Wisconsin, wanted to build a cordwood garden shed using mostly repurposed material, they called on Richard for advice.

Above: This small cordwood building to house a sauna could just as easily be a 12-foot x 16-foot hunting cabin, storage area, or a garage for a small sedan or tractor.

7 Reasons To Go With Cordwood

1. Cordwood construction is energy-efficient, sustainable and offers up great curbside appeal.

2. A do-it-yourselfer can do much of the construction.

3. Once a cordwood wall is built, it is finished inside and out.

4. Depending on how much of the work you can do yourself, the cost is half (or less than that) of conventional construction.

5. If you have access to softwood, you can fashion the basic building blocks of your home.

6. The logs are easy to handle and light enough that heavy equipment is not needed to lift them.

7. You don't need to build in a traditional rectangular shape. You can have curved walls in your design.

We determined that if someone was going to take the time to build a cordwood home, he or she might as well do it right. So we tested and summarized a set of best practices. The new book, *Cordwood Construction Best Practices* (published in 2012), is a comprehensive guide that details the many choices a cordwood builder needs to consider. It encourages a "do it right" philosophy, using the best combination of tried-and-true techniques and new innovations.

Before You Build

Some of the best practices include choosing the appropriate cordwood mortar mix, such as traditional cordwood mortar (sand, sawdust, lime, Portland), cob mortar (sand, clay, straw), lime putty mortar (lime, water, sand), papercrete mortar (paper, sand, lime), and cellulose mortar (lime, sand, cellulose).

Another best practice is the increasingly popular use of the Frank Lloyd Wright rubble trench foundation. This technique uses a gravel trench to keep water from settling under the foundation, preventing heaving. It saves thousands of dollars in construction costs and provides a foundation that works in many soils and climates (research what works with your specific soil and climate). The use of large overhangs, which provide protection for the cordwood walls and are crucial to an effective passive solar design, is another best practice.

A room-in-the-attic truss, coupled with an energy heel, allows for extra room above the main living area and extra insulation, to reduce heating bills. Many of these techniques are applicable for other natural building styles, as well.

Built To Last

After living in our cedar cordwood home for 34 years and reflecting on our lifestyle, there is little we would change. Homes are a unique blend of personal choices, lifestyle and financial decisions. We feel grateful and blessed. The maple syrup and apple cider pressing parties are a delight. Harvest time, and even the depths of winter when we are snuggled by the woodstove, are times we cherish. Yes, this cordwood home with its slight scent of cedar and pine was a good decision, and we would do it again in a heartbeat.

CORDWOOD CONNECTIONS

- Cordwood Construction Resources offers books, consultation, seminars and workshops. Additional information is available at: cordwoodconstruction.org, cordwoodconstruction.wordpress.com, facebook.com/cordwoodconstruction.
- Richard Flatau's book, *Cordwood Construction Best Practices*, is available at cordwoodconstruction.org and through Amazon.
- You can write to Richard and Becky Flatau at richardflatau@gmail.com.