Natural Timber Frame Homes

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BUILDING WITH WOOD, STONE, CLAY, AND STRAW

WAYNE J. BINGHAM

JEROD PFEFFER

Gibbs Smith, Publisher

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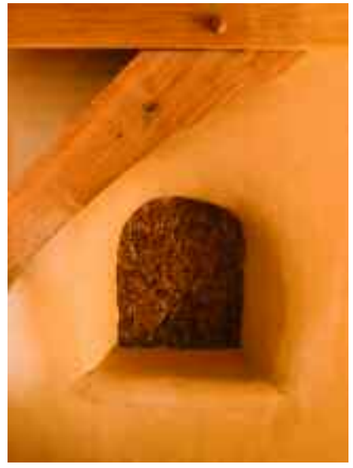
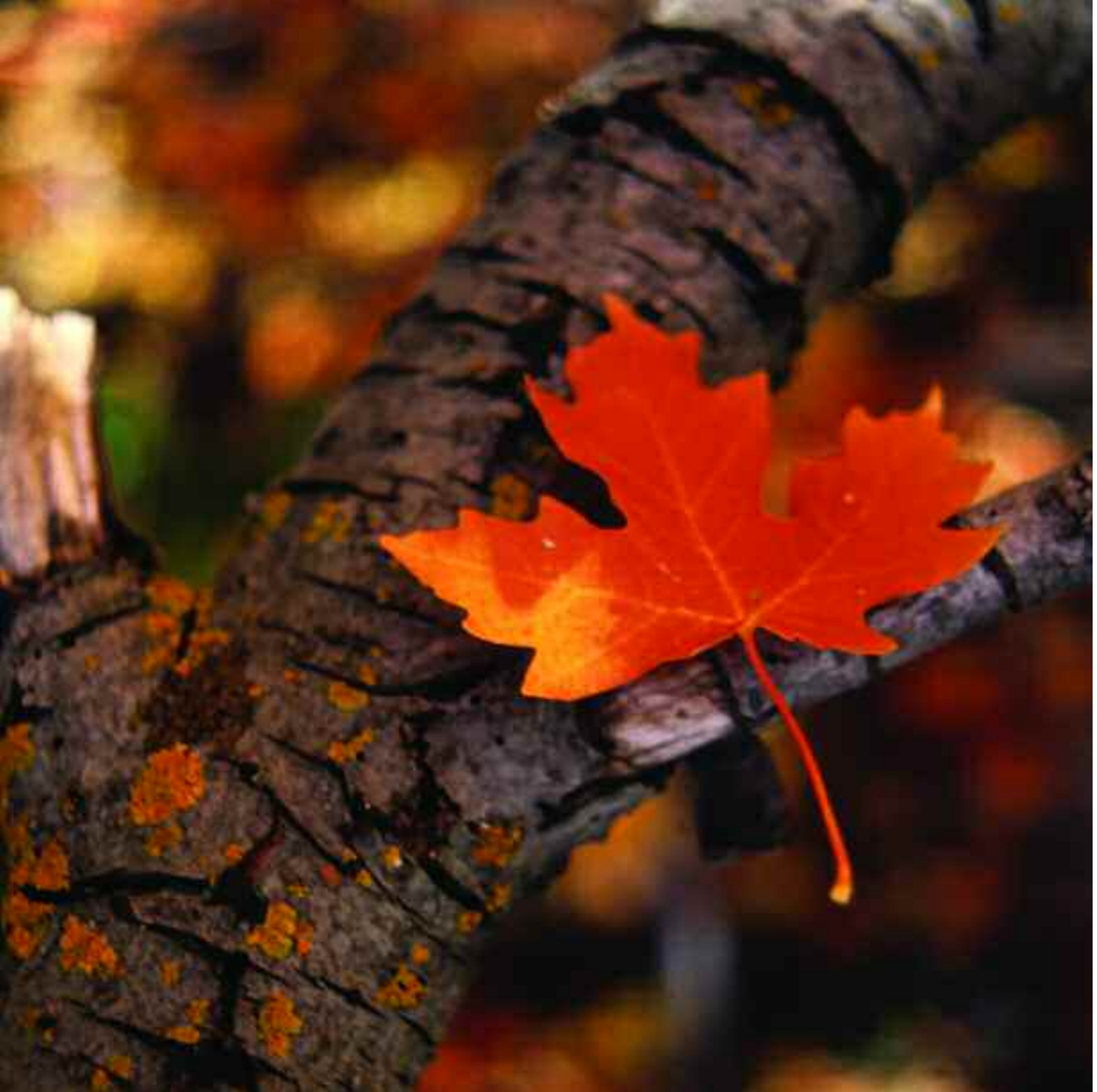
For Colleen, Michelle, David, Christopher, Jon, Mary, and Michael.
—Wayne J. Bingham

For Sage, whose smile has given me true shelter.
—Jerod Pfeffer





Contents

Acknowledgments

Building with natural, locally available materials feels like an ideological leap in an age of chipboard and vinyl. Yet this book is really a continuation of the job started with the first human shelter and developed by millennia of trial and error into the modern timber frame and straw wall. We owe a great debt to our ancestors for the accumulated knowledge of turning trees, stones, and mud into durable and beautiful shelters.

While traveling to capture images for this book, we were met with great enthusiasm and given gracious access to personal living spaces at every doorstep we visited, sometimes on very short notice. Thank you to the owners and builders who made their natural homes, their experiences, and their time available to us during this project. We are inspired by the level of craftsmanship being brought to contemporary natural buildings. We are especially grateful to Stormy and JJ Colman, Gilbert Geauthreau, Lynn and Derrick Goldberg, Chuck and Anne Hanson, Fran Hart, Alan and Linda Klagge, the Lama Foundation, Eric and Teresa Malone, Mark and Katie Waller, and Greg Weeks.

Kari Bremer of Natural & Green Design and Mark Giorgetti of Palo Santo Designs gave new meaning to the phrase *above and beyond* by giving generously of their time, ideas, and good company. Many of the homes presented in this book are the products of their fine craftsmanship.

Eric Malone and Eric Husted of Lorax Forest Care supplied us with access to their strawbale and timber frame homes and shared a vision of forestry as a solution instead of a problem. Thank you to Eric and Eric for showing us that sustainable wood products are both possible and practical.

For logistical assistance, insight, and inspiration, we are indebted to Kelly Ray Mathews, Werner Heiber, Gene Leone, and John Murray.

We are greatly indebted to the writings of Wendell Berry for perspective, inspiration, and hope.

Putting together a book is in many ways like building a house, proceeding from foundation to finish work. Without the original support of Gibbs Smith, Publisher, CEO Christopher Robbins, this book would never have become a reality. A big thank-you to our editor Aimee Stoddard for planing off the rough spots in the manuscript and asking questions where they needed to be asked.

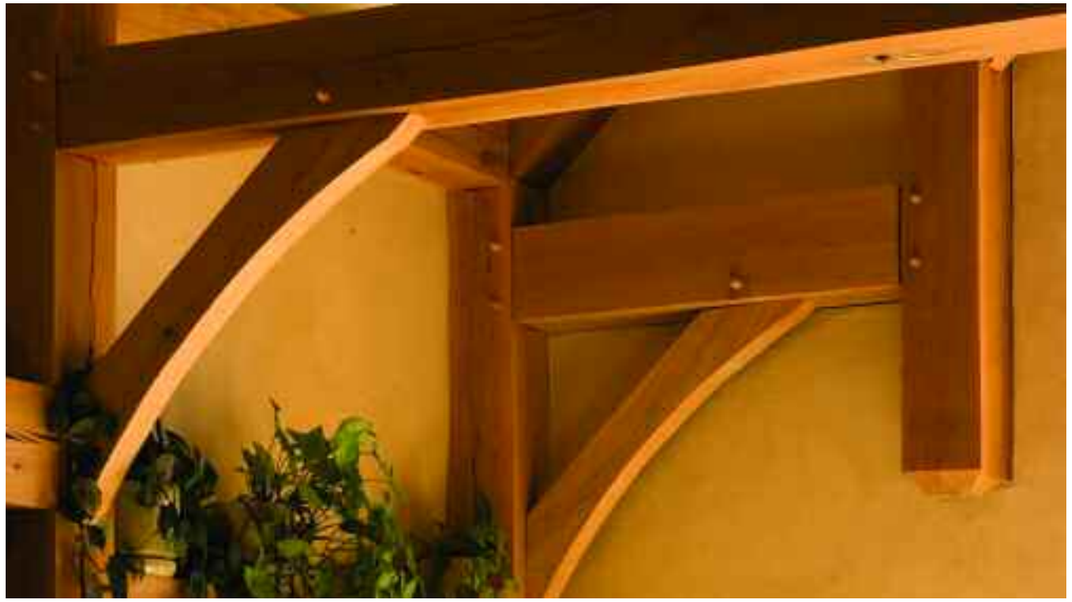
Thank you to Colleen Smith for proofreading several versions of the book, for becoming part of the production team at the eleventh hour, for handling many of the logistical issues involved in traveling around the country, for delivering well-timed and tasty calories to weary authors, and for putting up with two people talking about nothing but natural building.

Thank you to Sage Hibberd for offering feedback through a long winter of writing, for continuing to be a natural builder while her partner was off being a writer, for handling all the parts of life that still need tending to when a person is focused on only one thing, and for her enthusiasm for the book and encouragement.

Finally, we are grateful we had the opportunity to build our own wood, stone, clay, and straw homes. The ideas presented in this book are the direct result of our own trials, frequent errors, and sometimes surprising successes.

Porch roof supported with post and knee braces.

The strong grain of oak timber frame bents stands out from the earthen plaster.



Introduction

Have you peace, the quiet urge that reveals your power?
Have you remembrances, the glimmering arches that span the summits of the mind?
Have you beauty, that leads the heart from things fashioned of wood and stone to the holy mountain?
Tell me, have you these in your houses?

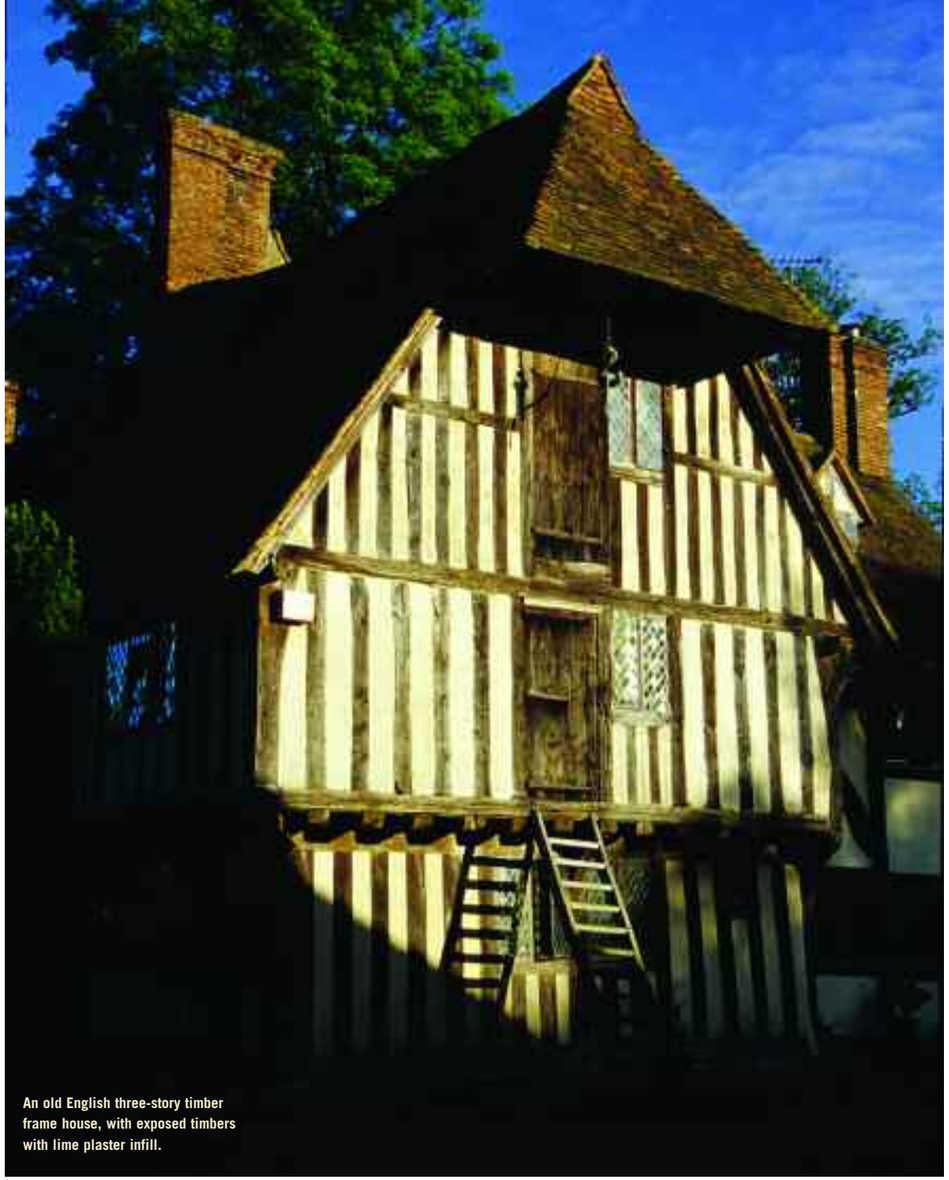
—Kahlil Gibran, *The Prophet*

The twenty-first century is a unique time to be human and in need of shelter. We can build anything that our imagination, determination, and pocketbooks will allow. The global economy has given us access to resources from everywhere: tropical hardwoods, imported metals, and exotic stone. Industry has made possible every conceivable product, including synthetic floors, roofs, and windows. Fossil fuels have allowed us to heat and cool increasingly larger houses.

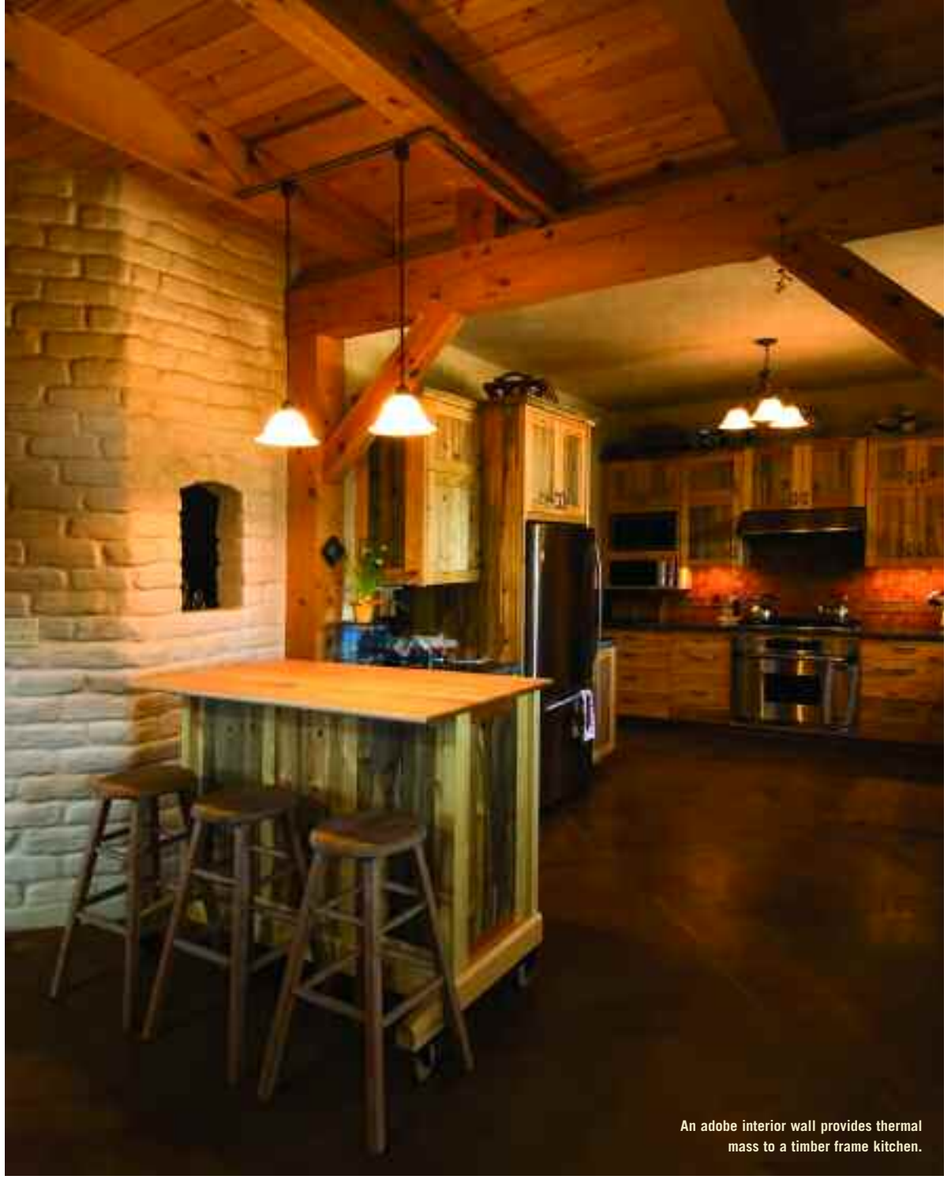
We have created a building system that implies no limits other than price.

An examination of the larger range of evidence, however, suggests that we have not properly accounted for the effect of our building systems on climatic stability, air quality, water quality, ecosystems, and biodiversity. Scientists are warning us that instead of happening sometime in future decades, climate change resulting from carbon-dioxide emissions has already begun. In the sunshine of cheap energy, we have allowed ourselves to believe that we are not constrained by the laws that govern the natural world.

Paralleling the climate change associated with burning petroleum is its rising price. Heating and cooling our inefficient structures is getting costly, and the problem will intensify as the petroleum supply diminishes. It is now increasingly difficult for some people to supply their home with adequate heat and air-conditioning. Political instability has strained the capacity of industrial nations to secure oil acquisition and a transit system, and this strain is felt in the price we pay for all commodities.



An old English three-story timber frame house, with exposed timbers with lime plaster infill.



An adobe interior wall provides thermal mass to a timber frame kitchen.

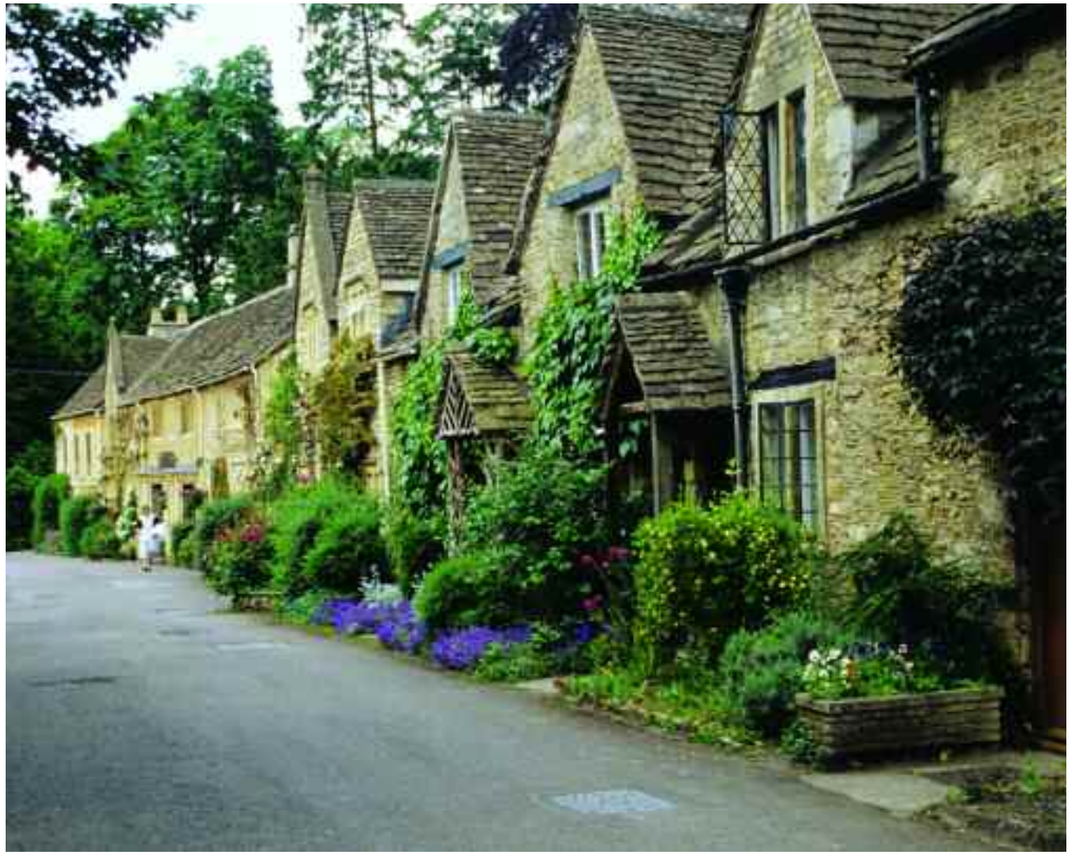
Synthetic stucco and manmade stone make up the townhome exteriors in a new, conventional building project.

America's Approach to Building

Building your own home with local materials is not a new idea. In fact, it has been the only approach of humans and other animals for most of history. However, as we have shifted the responsibility for building houses from ourselves and our community to industry, our involvement in building has declined, and the monetary cost has greatly increased. We pay hundreds of thousands of dollars, and because most homes are not built to last, houses are not the long-term investments they once were.

The poor quality of our houses is not primarily the fault of careless contractors, but instead the result of a building system designed to produce such a house. Low-quality, expensive dwellings are a product of the system functioning well. By giving over the responsibility of providing our own shelter to an industry, the house has moved from a personal creation to a commodity—not designed to be durable, beautiful, and efficient, but to encourage consumption. It is telling that the health of the housing industry on a national level is measured by the total number of homes built each year—an indication of one thing: quantity.

As our standard of living continues to rise—evidenced by bigger homes equipped with more conveniences—there has been a steady decline since World War II in the number of us who admit to leading satisfied lives. If more and bigger things really made us happy, the percentage should be getting higher. Why has the growing number of material goods left us unfulfilled?



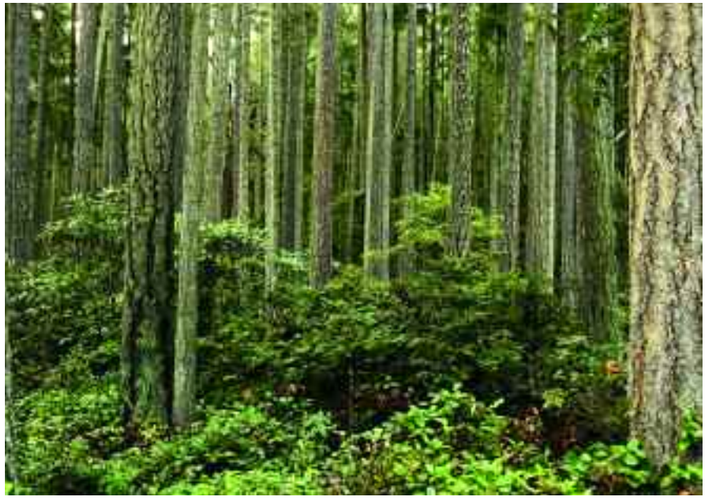
Roses and ivy greet pedestrians in an English community.

The answer is very much wrapped up in the way we conduct our lives. It is not irrational that we feel disconnected, marginalized, and isolated, and that "we don't know who we are"; this feeling is in many ways accurate. If who we are is defined by the relationships between us and other people, us and our food, us and our homes, then there are some large holes in our self-awareness.

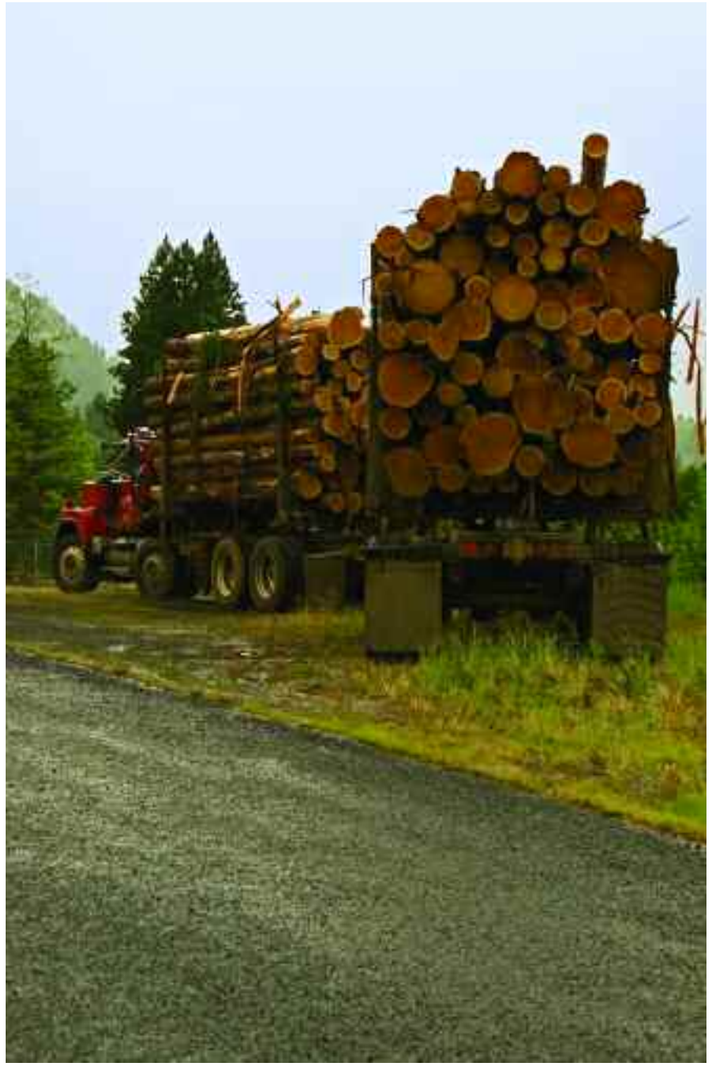
Sources of Materials

It is clear from the growing popularity of food co-ops, farmers markets, small breweries, and pottery studios that a segment of the population is seeking out the stories of their purchases. When we buy from department stores and lumberyards, we know only a small part of any item's history. The foremost question is, "How much does it cost?" Price is the primary consideration in an industrial economy because the anonymity of distant production and distribution allows us to think of all two-by-fours as the same.

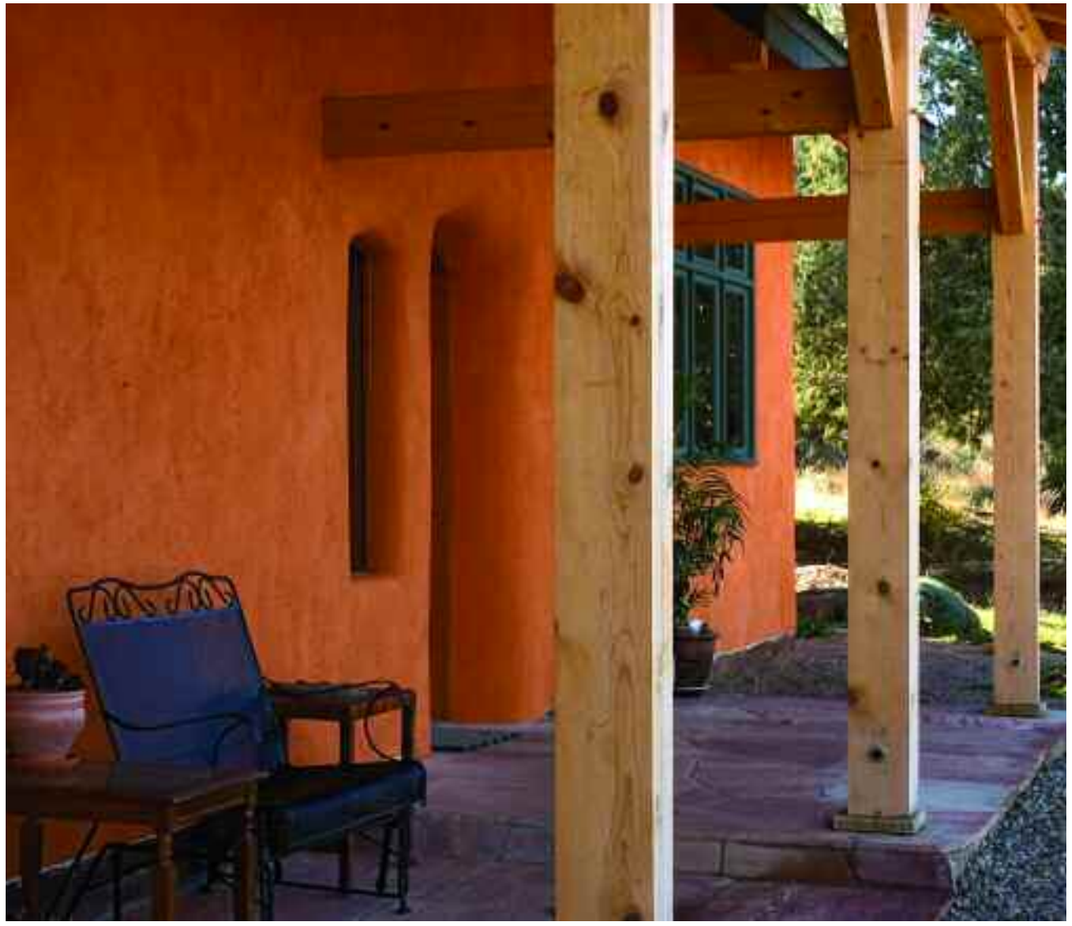
Every product has a story. But because the siding, plywood, light fixtures, concrete, and other home products we buy are manufactured so far from our doorstep, the job of telling their story is left to advertisers. They promise fulfillment, happiness, pleasure, and social grace, but deliver little in the way of genuine meaning.



Above: Timbers and planks air drying without energy-intensive kilns.
Below: Trees in a healthy forest can be thinned selectively, maintaining the health and longevity of the woodlot.



Conventional buildings rely on lumber transported great distances at high environmental and economic cost.

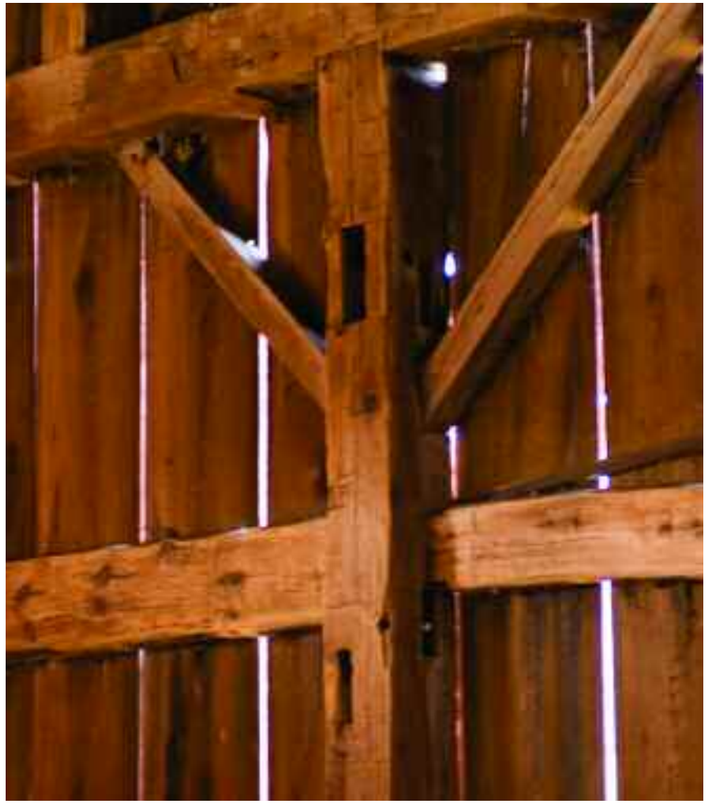


Textured plaster and smooth timber add visual interest and welcome visitors.

Local Materials and Renewable Energy

Our solution is both simple and radical: build with locally available materials and renewable energy. By using local wood and straw, we can become involved in the entire building process and be certain that it aligns with our values. In the global marketplace, such an accounting is nearly impossible.

Explore the place where you live. Are there forests nearby? What trees grow there? How much can you draw from the natural world without depleting it? Who can help you build? To be able to answer these questions is to be able to envision a sustainable future.



The frame of a two-hundred-year-old barn demonstrates the integrity of traditional building methods.

We argue in this book for drawing the support for your life from the place where you live. If our fuel, lumber, or food comes from somewhere else, we can only live comfortably to the extent that we are economically or politically powerful.

Leaving the world as good as or better than we found it is a personal and public responsibility. Industrial materials are profitable in a narrow sense, but the pollution, the high monetary cost, and the homogenizing effect on building are bankrupting our social landscape and cultural commons.

The belief that ordinary people cannot build houses without contractors has recently gained wide acceptance. Human history, however, richly illustrates the opposite: constructing our own shelter is not only possible, it reconnects us to the natural world in ways that we crave.

There are people everywhere, often without previous construction experience, discovering their ability to build. They are using local, recycled, and salvaged materials to construct inexpensive and beautiful homes. In the process, they are developing fit bodies, discovering unknown skills, and cultivating a feeling of independence.