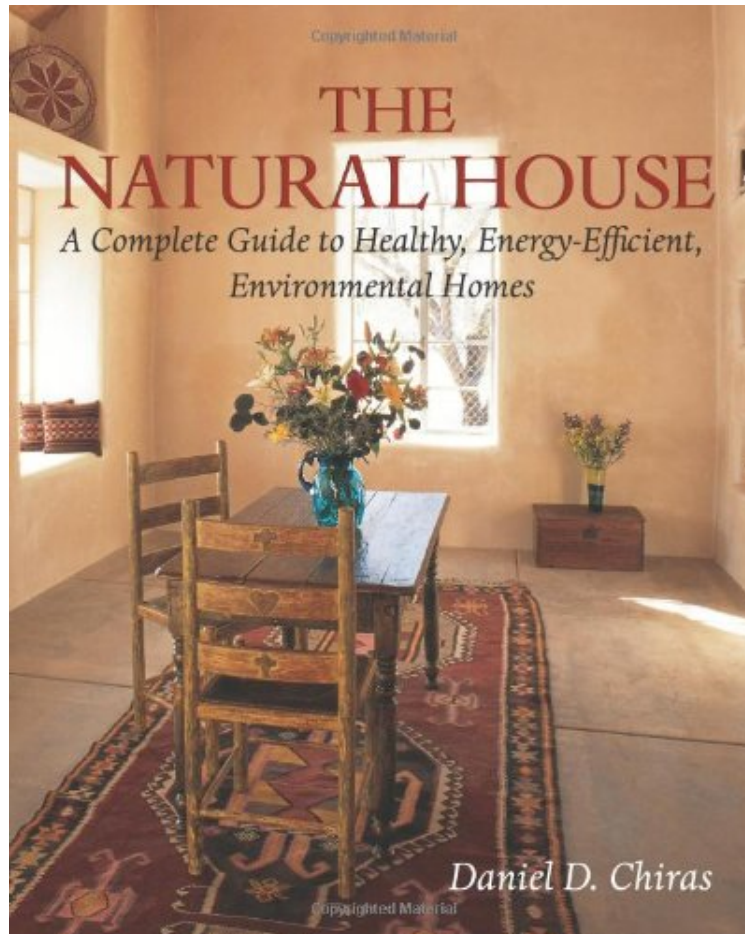


# The Natural House: A Complete Guide to Healthy, Energy-Efficient, Environmental Homes

*Daniel D. Chiras*

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**Daniel D. Chiras : The Natural House: A Complete Guide to Healthy, Energy-Efficient, Environmental Homes** before purchasing it in order to gauge whether or not it would be worth my time, and all praised The Natural House: A Complete Guide to Healthy, Energy-Efficient, Environmental Homes:

0 of 0 people found the following review helpful. A Book for Making Decisions By Garrett It covered most of the natural building styles, gave brief introductions into how each type of building is constructed. The best thing about this book is that the author included a summarizing list of pros and cons with each style at the end of the chapter. Examples of pros and cons listed at the end of each chapter: Will building in this style result in adequate insulation? How expensive is building with this style? Is building with this style difficult? How often will maintenance need to be done? Can you make disastrous errors building in this style, or are mistakes generally amenable? Another thing I was

pleased to find us that the author emphasises the hardships people have had as a result of building unstable, hazardous, and unusable natural houses and states that he wants readers to avoid building techniques that would result in those situations...And I decided to focus on Cob building ;)2 of 2 people found the following review helpful. The best overview book everBy MICHAEL BEGGS recently started my "journey" on learning about sustainable living, and natural building. I've been researching every type of construction technique I can find. I wish I had found this book first! It's a great overview that can point you in the right direction for the technique(s) that are best suited for you. Rather than researching every topic out there this book has allowed me to let a few drop off my "radar" so I can focus on what best pertains to my likes, desires, situation, and geographical location.The author does a great job of giving the basic overview of the varied techniques as well as some great specific and anecdotal information as well. Easy to read and informative. The standard hippie preachiness is present but kept to a minimum.I'm not a fan of books that waste my time. On the contrary, this book has saved me time by allowing me to concentrate my focus on what will work for me.1 of 1 people found the following review helpful. Love this bookBy MblueLove this book! It has so much information about different green building ideas, and compares them in a way that's both informative and interesting to read. I would recommend this for anyone thinking of building, it's full of the information you are probably looking for! Every idea or way of doing something is clearly explained and easy to understand.

The Natural House is a tour of the construction, costs, and pros and cons of fourteen natural building methods. Straw Bale, Rammed Earth, Cob, Cordwood, Adobe, Earthbags, Papercrete, Earthshipswhatever the method, the common goal is to create a house that is economical, energy efficient, nontoxic, soothing to the soul, kind to the environment, and pleasing to behold. This comprehensive sourcebook offers in-depth information that will guide your search for the perfect sustainable dream home. It is a must for home builders, contractors, and architects. Author Dan Chiras shows how you can gain energy independence and reduce your environmental impact through passive solar heating and cooling techniques, solar electricity, wind power, and micro-hydropower. He also explains safe, economical ways to obtain clean drinking water and treat wastewater, and discusses affordable green products. While he's an unabashed advocate of natural building techniques, Chiras takes care not to romanticize and to alert readers to avoidable pitfalls. His detailed, practical, and ecologically sound advice can save tens of thousands of dollars, whether you are buying, building, or renovating a natural home.

"Simply put, this is the most comprehensive and most useful introduction to natural building systems and practices available. A book that anyone setting out to build a home of natural materials should read--cover to cover."--Alex Wilson, executive editor and publisher, Environmental Building NewsAbout the AuthorDan Chiras paid his last electric bill in June of 1996. It is not that he has disavowed the use of electricity and modern conveniences, but rather that he has turned to the sun and wind to meet his family's needs. In 1995, Dan, a former full-time college professor with years of experience in sustainable development, built a state-of-the-art rammed earth tire and straw bale home in Evergreen, Colorado. He installed solar electric panels on the roof; a year or so later he installed a small wind generator. Since that time, he has met nearly all of his electrical needs for his home and office from these clean, renewable sources. Dan also heats his home in the foothills of the Rocky Mountains 8000-feet above sea level with energy from the sun thanks to passive solar design. For backup heat on those cold winter nights, he burns a cord of wood a year, gathered free from his community. His annual gas bill, mostly for showers and cooking, runs about \$120 a year - about \$2 to \$3 per month for natural gas and \$10 per month to read the meter! Dan has spent much of the past 30 years studying sustainability and applying what he has learned in solar energy, natural building, and green building to his residences, and most of the last ten years sharing the practical knowledge he has gained through writing, lectures, slide shows, and workshops. Dan has published 21 books to date including several college and high school textbooks: Environmental Science: Creating a Sustainable Future, Natural Resource Conservation, Human Biology, and Biology: The Web of Life. His high school environmental science text, Environmental Science, was selected as the official book of the U.S. Academic Decathlon's 1991 competition. In the early 1990s, Dan published two trade books on environmental issues and sustainability for a general audience: Beyond the Fray: Reshaping America's Response and Lessons from Nature: Learning to Live Sustainably on the Earth. Since 1995, Dan has focused most of his attention on residential green building. He has written extensively on the subject. His is books include: The Natural House: A Complete Guide to Healthy, Energy Efficient, Environmental Homes; The Natural Plaster Book; The Solar House: Passive Heating and Cooling; Superbia! 31 Ways to Create Sustainable Suburbs; and The New Ecological Home. His newest book, EcoKids: Raising Kids Who Care for the Earth will be published in the Spring of 2005 by New Society Publishers. Dan also writes extensively for magazines, journals, newsletters, and newspapers. He has published nearly 250 articles on environmental issues, sustainability, natural building, natural plaster, green building, and passive solar heating and cooling. His articles appear regularly in Home Power, Mother Earth News, Natural Home, and The Last Straw. Dan also writes frequently for World Book Encyclopedia (Science Year) and Encyclopedia Americana. He authored a 12-page article on the environment for Encyclopedia Americana. Dan has written environmental pollution section for World Book Encyclopedia's annual publication, Science Year, since 1993.

In 1997, he wrote an extensive piece for World Book on population growth and its many implications. Dan also wrote the ecology and air pollution sections for Encyclopedia Americana. In addition to his writing, Dan has served as an adjunct professor at the University of Colorado in Denver and the University of Colorado at Denver. He has been a visiting professor at the University of Washington, where he taught a course on environmental science. He currently is a Melon Visiting Professor at Colorado College where he teaches courses on renewable energy, ecological design, and sustainable development. Through his writing and teaching in the 1980s and early 1990s, Dan played a leading role in promoting critical thinking, an understanding of the root causes of environmental issues, systemic solutions to environmental problems, sustainable development. He pioneered a systems approach to sustainable development and has played a lead role in articulating the principles, policies, and practices of sustainable development which seeks ways that business and society can prosper within a healthy environment. He is currently focusing most of his research and writing on sustainable building and sustainable communities. Dan's free time is spent mountain biking, canoeing, playing music, and gardening. For more information visit [danchiras.com](http://danchiras.com). Excerpt. Reprinted by permission. All rights reserved.

From Chapter 1: Striking Out in a New Direction This book is my attempt to help you make as many correct decisions as possible, eliminating costly and embarrassing mistakes, while fashioning a house that serves the spirit, the planet, and the body. As you proceed, you will find that many so-called experts will express divergent views on various issues--for example, whether it makes sense to place rigid foam under a concrete slab. People just plain differ in their views. Always seek competent advice and be wary of those who can't back up their assertions with hard facts. If you feel in your guts that something isn't right, trust your intuition. Some misinformation comes from proponents of particular homes, who often promote "their technology" as if it were the ultimate in homebuilding. Well meaning and vital to the advancement of natural homebuilding, these pioneers sometimes suffer from a bit of zealotry that we must accept, understand, and lovingly forgive. Beware of rosy construction cost estimates, too. Tim Pettet, an Earthship, straw bale, and adobe builder based in Ouray, Colorado, makes a living largely helping people who have gotten into trouble, either financially or technically, while building a natural home of their own. Many of his clients, he says, have read an article or two in a popular magazine or newspaper about people who have built Earthships for some ridiculously low price, then set out to replicate the experience. Sadly, many of them find that they can't build the home of their dreams for \$40 per square foot. Others run into difficulty, being swayed by wrongful assertions that it is "easy to build a natural home." Low on money or in over their heads, they call Tim to bail them out. (Tim is listed in the resource guide.) If you are building your own home, hire a consultant early on, before you start construction. As Cedar Rose, a consultant and natural builder from Carbondale, Colorado asserts, "People get into trouble because they don't spend enough time planning. A few thousand dollars spent on planning can save you tens of thousands of dollars in the long run." From Chapter 6: Should You Build with Cob? By now, you are aware that each form of natural building has its list of pros and cons. Let me hasten to add that disadvantages are not unique to alternative building. Conventional homebuilding has disadvantages, too. But because we are so familiar with conventional techniques, we forget the disadvantages, among them, their egregious depletion of the Earth's natural resources. So, don't damn alternative building for a few faults until you've compared it to conventional practices.

Advantages of Building with Cob

- \* Building with earth can be fun and relatively inexpensive, especially if you do the work yourself, scrounge for materials, build a simple structure, and have modest desires when it comes to finish materials.
- \* Cob structures lend themselves to curved walls and other visually inviting features. It is easy and fun to fashion niches, furniture, and shelves out of cob.
- \* Cob construction encourages artistic expression. Walls can be designed as they go up, providing maximum creative freedom. A cob home can be as much art as it is a home.
- \* Rounded, tapered walls appear to be highly resistant to earthquakes.
- \* Cob construction does not require forms as in rammed earth construction.
- \* Cob is applied directly to the wall, eliminating the need to make mud bricks, as in adobe construction.
- \* Cob homes are ideally suited for passive solar heating.
- \* In some areas, such as arid desert regions, cob stays warm in the winter and cool in the summer.
- \* Thick cob walls insulate the interior space from outside noise.
- \* Cob construction relies on locally available resources.
- \* Cob construction requires much less wood and fewer manufactured building materials than many other forms of building.
- \* Cob construction is relatively easy to learn and requires minimal building skills. Even kids can become skilled cobbers.
- \* Cob construction is labor intensive, but requires very little outside energy or power tools.
- \* Cob construction is forgiving. Mistakes can be easily rectified.
- \* Cob integrates well with other earth-friendly forms of architecture, including straw bale and adobe.
- \* Cob is easy to remodel, even when fully cured. For example, windows can be added and walls can be extended to create new living space.
- \* Cob can be used to fashion niches, furniture, and shelves.
- \* Cob walls are fireproof.
- \* Building with cob poses little danger to workers on the site.
- \* Cob construction encourages community participation. Young and old, family and friends, can participate in meaningful ways.

What Are the Disadvantages?

- \* Getting approval for cob construction may be difficult in some areas. In the U.S., there are only a few jurisdictions that formally approve cob construction. Many cob builders therefore choose to avoid building departments. Although this is an option, it is a risky one. If you are caught, a building department can force you to tear down an unpermitted structure. Note: Some legally permitted cob buildings are now starting to appear. These may make it easier in the future for others to follow suit.
- \* Cob construction, while relatively simple, is labor intensive. That can be a plus or a minus, depending on your personality and your attitudes

about the value of hard work. \* Stone foundations, which are often used in cob construction, are also labor intensive. A small, 20-foot round building will require 8 tons of stone, which are usually collected by hand, stockpiled, and then set in place. \* Cob is a remarkable housing alternative. To many people, its benefits clearly outweigh its negatives. But earth-friendly architecture is only half of the battle to living lightly on the land. To be sustainable, the home should incorporate passive solar design, solar electricity, recycled materials, rain catchment, graywater recycling, and other features discussed in Part 3.