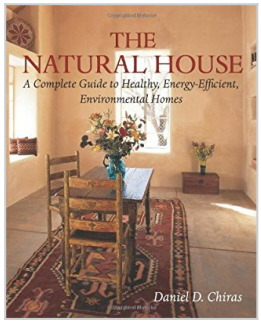

The Natural House: A Complete Guide to Healthy, Energy-Efficient, Environmental Homes

By Daniel D. Chiras

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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, Earthships…whatever 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.

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Editorial Review

Review

"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 News***

About the Author

Dan 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.

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 zealousness 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.

Users Review

From reader reviews:

James Hubbard:

In this 21st centuries, people become competitive in each way. By being competitive currently, people have do something to make these individuals survives, being in the middle of typically the crowded place and notice by simply surrounding. One thing that oftentimes many people have underestimated it for a while is reading. That's why, by reading a book your ability to survive enhance then having chance to remain than other is high. In your case who want to start reading a book, we give you this specific The Natural House: A Complete Guide to Healthy, Energy-Efficient, Environmental Homes book as nice and daily reading e-book. Why, because this book is more than just a book.

Arthur Pineda:

Information is provisions for individuals to get better life, information nowadays can get by anyone from everywhere. The information can be a knowledge or any news even a concern. What people must be consider while those information which is inside former life are challenging be find than now could be taking seriously which one would work to believe or which one the particular resource are convinced. If you get the unstable resource then you get it as your main information you will see huge disadvantage for you. All of those possibilities will not happen throughout you if you take The Natural House: A Complete Guide to Healthy, Energy-Efficient, Environmental Homes as the daily resource information.

Gary Clark:

People live in this new moment of lifestyle always try to and must have the extra time or they will get lot of stress from both way of life and work. So , if we ask do people have extra time, we will say absolutely indeed. People is human not really a huge robot. Then we question again, what kind of activity do you have when the spare time coming to you actually of course your answer can unlimited right. Then ever try this one, reading textbooks. It can be your alternative within spending your spare time, the particular book you have read is usually The Natural House: A Complete Guide to Healthy, Energy-Efficient, Environmental Homes.

Veronica Gregor:

E-book is one of source of information. We can add our know-how from it. Not only for students but additionally native or citizen need book to know the upgrade information of year to help year. As we know those ebooks have many advantages. Beside most of us add our knowledge, can also bring us to around the world. By book The Natural House: A Complete Guide to Healthy, Energy-Efficient, Environmental Homes we can take more advantage. Don't you to be creative people? Being creative person must prefer to read a book. Merely choose the best book that appropriate with your aim. Don't always be doubt to change your life by this book The Natural House: A Complete Guide to Healthy, Energy-Efficient, Environmental Homes. You can more pleasing than now.

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