

Your hands-on, practical guide to the materials and construction methods of green building

Green Building & Remodeling FOR DUMMIES®

Eric Corey Freed

Architect and principal, organicARCHITECT
LEED Accredited Professional



A Reference for the Rest of Us!®



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WILEY

Wiley Publishing, Inc.

Green Building & Remodeling For Dummies®

Published by

Wiley Publishing, Inc.

111 River St.

Hoboken, NJ 07030-5774

www.wiley.com

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Indianapolis, Indiana

Published simultaneously in Canada

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Library of Congress Control Number: 2007939643

ISBN: 978-0-470-17559-0

Manufactured in the United States of America

This book is printed on recycled paper.

10 9 8 7 6 5 4 3 2 1



About the Author

Eric Corey Freed is an architect, lecturer, and writer based in San Francisco, California, with 15 years of experience in green building. He is a practitioner in the tradition of organic architecture, first developed by Frank Lloyd Wright.

Eric is founder and principal of organicARCHITECT, part architecture firm, part think tank. In addition to designing award-winning green buildings, the firm publishes its research and produces the annual organicAWARDS (www.organicawards.com) to recognize designs that are both innovative and environmentally responsible.

During Eric's early years working in his hometown of Philadelphia and in New York City, noted architect and critic Philip Johnson cited Eric as "one of the real brains of his generation." After several years in Santa Fe, New Mexico, working with natural building materials, he moved to San Francisco in 1997 to join the heart of the green building movement.

In 2002, he was Founding Chair of Architecture for the San Francisco Design Museum, the exhibits of which were featured in *Metropolis*, *ARTNews*, and *Newsweek*. In 2005, *San Francisco* magazine named Eric the city's "Best Green Architect."

Eric teaches in the Sustainable Design program he co-developed at the Academy of Art University and the

University of California, Berkeley. He is on the boards of Architects, Designers & Planners for Social Responsibility (ADPSR), Natural World Museum, Green Home Guide, and West Coast Green, as well as the advisory boards of nearly a dozen other organizations.

A much sought-after lecturer, Eric speaks extensively around the United States, giving nearly 50 talks a year, and consults directly to large companies seeking to transition into sustainability.

His monthly column, *Ask the Green Architect*, is published by GreenerBuildings and syndicated to dozens of other publications. He is a regular columnist for *LUXE Magazine* and his work has been featured in *Dwell*, *Natural Home*, *Newsweek*, and *Town & Country*, among others.

Eric loves talking with people about design and the environment. For more information on his work and activities, visit www.organicarchitect.com or contact Eric directly at info@organicarchitect.com.

Dedication

This book is dedicated to my beautiful wife, Laurie. If you wish to “be the change you wish to see in the world” it helps to have someone with whom to share your vision. I strive to make the world a better place for her.

This book is also dedicated to my dad, my first mentor.

Author's Acknowledgments

A hundred times every day I remind myself that my inner and outer life depend on the labors of other men, living and dead, and that I must exert myself in order to give in the same measure as I have received and am still receiving.

—Albert Einstein

As a teacher and mentor, I am fortunate to meet hundreds of students a year. Their questions, enthusiasm, and energy inspire me each day.

I am privileged to work with some of the most fun and passionate people who contributed their research and ideas to this book: Joey Becker, Lamia Bensouda, Sara Buck, Hannah Hunt, Elisa Kim, Tanya Lee, Amie Lewis, Liz Maquire, Emily Naud, Emily Privot, Jessica Resmini, David Waldorf, Marita Wallhagen, and Drew Wentzel.

Building Green (www.buildinggreen.com) is a daily and invaluable resource, and I drew heavily on their insight and expertise.

The following people must be thanked by name, (and you can just assume they know what they did to deserve mention): Nick Aster, Chris Bartle, Nicole Cassani,

Howard Chambers, James DeKoven, Gabrielle Fladd, Gil Friend, Stacey Frost, Jennifer Gadiel, Matt Golden, Christi Graham, Jeff Hamaoui, Ryan Hamilton, Zem Joaquin, David Johnston, Miriam Karell, Hunter Lovins, Joe Lstiburek, Willem Maas, Tyler Manchuck, Joel Makower, William McDonough, Laura Rodormer, Michael Sammet, Amy Sagalkin, Richard Silver, Mark Singer, Arthur Young, Dennis Yanez, and Jerry Yudelson.

I would particularly like to thank my editor, Elizabeth Kuball, for being such a strict taskmaster and keeping me on schedule through a strategy of fear and intimidation. The staff at Wiley Publishing, Inc., is incredibly impressive and I am appreciative of their dedication.

This book could not have been possible without my clients, the generous patrons providing the canvas on which I paint.

Publisher's Acknowledgments

We're proud of this book; please send us your comments through our Dummies online registration form located at www.dummies.com/register/.

Some of the people who helped bring this book to market include the following:

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Indexer: Potomac Indexing, LLC

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Introduction

Our grandchildren will look back at this time in history, this push toward a sustainable world, as the moment of the greatest opportunity, excitement, and challenge in human history. As you read this book, you won't be able to help but get caught up in this feeling. You've heard about green building, maybe even read books and magazines about various homes with a green focus. Now is the time to plan *your* green dream home and discover the art of building in a responsible manner.

As you learn more about green building, you may start to have feelings of guilt. After all, the act of building is disruptive. Building a home, even a green home, uses materials, resources, and energy, and it produces waste. This is inevitable. And there is no perfect green material — all materials will have *some* impact on our planet. But don't beat yourself up about what you can't control; instead, focus your energy on what you *can* control.

For thousands of years, human beings built their homes out of natural materials, using the sun to heat and cool, and harvesting the rainwater for other uses. We can learn from our past to understand how to build our future. In fact, in the future, I believe that all buildings will be green buildings.

Whether your green dream home is a simple remodel, or a multi-million-dollar mansion, *Green Building &*

Remodeling For Dummies is for you. Instead of making you feel guilty about the environment, this book guides you step by step toward selecting the finishes, systems, and structure to make your dream a reality.

About This Book

Building or remodeling a home is a stressful, expensive, and exhilarating experience. Countless details and decisions go into design and construction. This book is not a comprehensive guide to building or remodeling your home. Several other *For Dummies* books are far better at covering those topics in greater detail. But if your interest is in *green* building and remodeling, and examining the issues, costs, and considerations surrounding it, this book provides all the answers you need — a wonderful, easy-to-use reference you can take with you anywhere.

Although dozens of books have been written about green building, most are targeted at professionals already interested in green building, while others assume that readers have some experience with it. Part of the reason I chose to write this book was to create this missing piece — a book targeted at normal people wanting to green their homes, but not having any idea where to start.

I divide this book into five parts, each targeting a different area of understanding in building a green

home. Each chapter is broken down into specific topics, each exploring the various issues and questions that will arise in looking at your own home. For example:

- ✓ The various people you'll need on your team, from architects to financing people
- ✓ How to develop a set of priorities for the materials you choose, including wading through the endless choices available
- ✓ How certain construction methods influence your design
- ✓ Comprehensive advice on how to budget these features into your home, and ways to save money in the process

The wonderful design of the *For Dummies* series is that *you* decide how to read it. You can start to read from any point in the text, getting just to the information you need. The table of contents in the front and the index in the back help you find exactly the information you want.

Conventions Used in This Book

I use the following conventions throughout the text to make everything consistent and easy to understand:

- ✓ All Web addresses appear in monofont.

✓ New terms appear in *italics* and are closely followed by an easy-to-understand definition. Everything is in plain English to make it accessible.

✓ **Bold** text indicates keywords in bulleted lists or highlights the action parts of numbered steps.

When this book was printed, some Web addresses may have needed to break across two lines of text. If that happened, rest assured that I haven't put in any extra characters (such as hyphens) to indicate the break. So, when using one of these Web addresses, just type in exactly what you see in this book, pretending as though the line break doesn't exist.

What You're Not to Read

This book was carefully written so you can easily find and understand everything you need to know about green building and remodeling. I know you're busy and don't have time to read every single word, so I've designed this book so you can identify the stuff to skip over. Unless you're trapped in a remote mountain cabin, please feel free to skip the following:

✓ **Text in sidebars:** Those shaded boxes that appear from time to time in the book are called sidebars. These include fun, extra asides in case you're looking for more detail. But they're nothing essential or required to make your home green.

✓ **Anything with a Technical Stuff icon:** This information is interesting, but a little nerdy, so if you skip it, it's not the end of the world.

✓ **The tiny text on the copyright page:** Do you really care about the publisher's address? I don't either. Skip it unless you want to test your eyesight.

Foolish Assumptions

Throughout the writing of this book, I had only you (the gentle reader) in mind. Don't be alarmed, but here's what I assumed:

✓ You've already heard about green building, and you are interested in it enough to buy this book.

✓ You're not a hippie, but you probably recycle.

✓ You don't want to live in a mud hut.

✓ You either own, or are thinking about buying, a hybrid car.

✓ You want to improve your home through remodeling, adding on, or building something new.

✓ You're not a lottery winner, and you have real concerns about cost and budget. You need and want to make well-informed decisions regarding the budget and the long-term costs of operating your home.

✓ You're willing to be realistic and accept certain realities about cost, availability, and the environment.

✔ You're aware of the environmental issues facing our planet. You know that global warming, air and water pollution, and an energy crisis are all real problems that need to be addressed.

✔ You don't want to feel guilty about your own impact on the environment — you'd rather do something positive to better it.

How This Book Is Organized

This book is divided into five parts. Feel free to jump to any part you want! The following sections explain what you'll find and where it will be.

Part I: The Need for Green

This section begins by defining what makes a building green. In order to understand green building, you first need to understand the huge impact buildings have on our planet; Chapter 2 covers this, as well as identifying the hidden opportunities in any building. Because you probably already live in a house, Chapter 3 discusses remodeling issues and ways to add value to your existing home. Before you start a construction project, you'll need to put a team together, and Chapter 4 explains how to find good professionals.

Part II: Paying Attention to Material Matters

This section is the core lesson in materials. Beginning with exploring the entire life of materials in Chapter 5, you see how to analyze any material or product for its green qualities. Chapter 6 explores an innovative way to create new sustainable materials and talks about how to choose between the various choices out there. In Chapter 7, I get into the details of a green house, from the walls to the floors and everything in between.

Part III: Green Building Methods

This part focuses on construction methods. I cover framing in Chapter 8, natural building in Chapter 9, and manufactured systems in Chapter 10. Don't worry, though: I evaluate the pros and cons of each system I introduce, allowing you to make the decision about what's right for your own home.