

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

Green Building & Remodeling

FOR

DUMMIES[®]

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A Reference for the Rest of Us!®



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Green Building & Remodeling For Dummies®

Cheat
Sheet

Solar Panel Calculator

Although your exact solar needs will vary depending on where you live, this handy calculator will help you figure out an idea of the size and cost of adding solar electricity to your home.

1. **Locate the total kilowatt hours (kWh) from the "Usage" portion of your monthly electricity bill, under "Electric Charges." Enter the number below.**

_____ kWh per month

2. **Multiply the number in Step 1 by 12 to roughly calculate your electricity use in a year. Enter the number below.**

_____ kWh per year

Note: If you have your electricity bills for a year, skip Step 1, add up all the kWh from each of the 12 bills, and enter the number above. (You use more electricity in the summer than the winter, so using a year's worth of bills gives you a more accurate picture.)

3. **In the following blank, enter 5,000 if you live in the Southwest; enter 4,000 if you live in California, Florida, or the Midwest; and enter 2,500 if you live anywhere else in the United States or Canada.**

_____ solar irradiance

4. **Divide the number in Step 2 by the number in Step 3 and enter the number below.**

_____ kW system

5. **Multiply the number in Step 4 by 150.**

_____ square feet of panels needed on your roof

6. **Multiply the number from Step 4 by \$5,000 (for the low end) or \$7,500 (for the high end), and enter the number below. This is what each kW will cost you (after rebates).**

\$ _____ installed cost for your system

7. **To figure your monthly payment (assuming 6.5 percent APR for 30 years), divide the number in Step 6 by 150. Enter the number below.**

\$ _____ per month

8. **To figure the increase in property value (depending on the state in which you live, this could be exempt from property taxes), multiply the number in Step 6 by 0.50.**

\$ _____

9. **To figure the payback time, divide the number in Step 6 by the number from Step 1. Enter the number below.**

_____ number of months it will take for your payback

Note: These numbers are approximate and generalized to work around the United States. Visit www.findsolar.com for more accurate pricing information.

For Dummies: Bestselling Book Series for Beginners



Green Building & Remodeling For Dummies®

Cheat
Sheet

Green Cleaners Cookbook

Your kitchen offers a wide array of ingredients for naturally cleaning your home and office. Save some money and make batches of your own healthy household cleaners.

All-Purpose Household Cleaner

1 quart warm water
1 teaspoon liquid hand soap
1 squeeze of a lemon

This household cleaner is good for counter-tops, floors, walls, rugs, upholstery, and more.

Furniture Polish

1 pint mineral oil
1 squeeze of a lemon

Drain Cleaner

1 cup baking soda
1 cup salt
¼ cup cream of tartar

Pour ¼ cup of this drain cleaner down your drain once a week to keep it clean.

Clothing Stain Remover

½ teaspoon lemon juice
¼ teaspoon cream of tartar

Mix these ingredients to create paste, spread it over the stain, and allow it to dry before washing your clothes.

Carpet Stain Remover

Baking soda or club soda

Rub baking soda or club soda into carpet and vacuum until stain is removed.

Mirror and Window Cleaner

1 tablespoon rubbing alcohol
½ cup white vinegar
1 quart water
Newspaper

Combine the liquid ingredients, put them into a spray bottle, and spray the solution onto your windows. Dry the windows with newspaper.

Silverware Cleaner

Toothpaste
Toothbrush

Scrub silverware with toothpaste. Rinse with warm water.

Oven Cleaning

1. After dinner, cover the bottom of a cooled oven with baking soda.
2. Spray with water until very damp, and keep moist by spraying every few hours until bedtime.
3. Let set overnight.
4. In the morning, scoop out the baking soda and grime and wipe well.

Paint Remover for Your Hands

Use vegetable oil instead of paint thinner to remove paint from hands and skin.

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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.

Part IV: Green Building Systems and Site Planning

This part offers a detailed look at the wonderful world of the sustainable systems that go into a building. Chapter 11 begins with the variety of energy systems available. After this come the heating and cooling systems that keep you and your family comfortable, explored in Chapter 12. The last type of systems, water systems, are discussed in Chapter 13. And Chapter 14 covers the landscape and orientation of the building, where you'll see there is more to landscape than just grass.

Part V: The Part of Tens

Because green building is so misunderstood, Chapter 15 gives you ten of the most common misconceptions people have regarding green building. Chapter 16 explains the things you should do for every green building project. You may start drooling when you read Chapter 17 and the ten green materials you can't live without. Finally, plan your weekend projects with Chapter 18's list of ten things you should do right now in your own home.

Appendix

The appendix is a helpful reference guide. From sources to find green materials, respected green certification, and detailed information on the LEED Green Building Rating System, the appendix covers information you'll want to have handy.

Icons Used in This Book

To make this book easy to read and simple to use, I include these helpful icons to help you find the key ideas and information:



Discover ways to protect the health of you and your family wherever you find this icon.



This icon highlights information that's so important you'll want to remember it later.



Although this information may be fascinating, it's not critical to your understanding of the subject. Unless you're feeling like an overachiever, feel free to skip it.



Using expert advice and real-world experience, these tidbits save you time and money — and preserve your sanity!



Avoid costly mistakes by following the sage advice next to this icon.

Where to Go from Here

Everything in this book is organized as an independent topic, so you can jump to just that section and understand it completely. If you already understand the reasons why you should build green, but you don't understand green materials, jump ahead to Chapter 5 to find out about analyzing materials. Unsure what solar panels really do? Flip to Chapter 11 to explore all the energy systems. Even if you're just looking for quick tips on what you can do in your current home right now, turn to Chapter 18 for a complete list.

If it all sounds interesting and you're not sure where to begin, you'll enjoy Part I. It gives you a firm foundation in understanding the issues around green building and remodeling. From there, skip around to the areas that interest you.

Finally, give yourself a pat on the back for doing your part to save our environment. Small steps you can take in your own building or remodeling project can reap major rewards for you, your family, and the planet.

Part V

The Part of Tens

The 5th Wave

By Rich Tennant



"Dual-flush toilets, recycled-content tile, flow-reduced faucets...Where's it all end, Stan?"

In this part . . .

This would not be a *For Dummies* book without these handy chapters of tens. Because green building is so misunderstood, I dispel ten myths about green building and remodeling in Chapter 15. Chapter 16 explains the things you should do for every green building project. You may start drooling when you read Chapter 17 and the ten materials you can't live without. Finally, plan your weekend projects with this list of ten things you should do right now in your own home, in Chapter 18.

Chapter 15

Ten Common Myths about Green Building and Remodeling

In This Chapter

- ▶ Arguing in favor of green building and remodeling
 - ▶ Dispelling myths about going green
 - ▶ Changing the minds of people who are against green building
-

Green building and remodeling are mysteries to most people. And like any good mystery, this one is rife with rumors, myths, and misconceptions. When you start telling people about your green building or remodeling project, you'll hear a wide range of odd and funny comments about going green. Most of them will be wrong. In this chapter, I fill you in on ten of the most common myths and replace the rumors with reality.

Green Buildings Always Cost More Than Traditional Buildings

Not true. Good architects and contractors know how to save their clients money. With a clear budget, there is no reason you can't build a green building for the same price or *less than* the cost of a traditional building.

The U.S. Green Building Council (USGBC) provides, among other things, data on the costs of green buildings. In 1995, it estimated that a green building added only 7 percent to the upfront cost of construction. For that small amount, you got energy efficiency, lower water bills, and happier occupants.

But that was a long time ago.

Today, the USGBC estimates that green buildings add 0 percent to 1 percent to the upfront cost of the building. In other words, there is *no difference* in cost.

Green Materials Are More Expensive

Although some green materials cost more than their traditional counterparts, many more green materials cost far less than the standard. As green materials have grown in popularity, their cost has come down. At the same time, because most traditional materials involve oil in their production, and because oil is now so expensive, the cost of those traditional materials has gone up.

Advances in recycling, new materials, and better designs have allowed for a new generation of environmentally friendly products that are less costly to produce. Some of the most innovative, beautiful, and unique finishes available today are coming from green manufacturers.

Green Buildings Take Longer to Build

This myth is a myth for a reason: It's completely false. Most green buildings simply substitute one material for another, more sustainable one. These substitutions have no effect on the construction time.

The type of *construction* determines the construction time. For example, the walls of a straw-bale house can be built in a day or so, while a traditional wood-frame building takes much longer. As another example, a home built with structural insulated panels can be erected in half the time of a wood-frame house.

Because some green buildings are designed to reduce construction waste, they may even *speed up* the construction process.

Green Buildings Look Like Mud Huts or Rice Cakes

Most green buildings look like just like their traditional, non-green counterparts. In fact, you've probably been in an environmentally friendly building and not known it. Some green buildings *are* made out of mud or straw — and, understandably, they get lots of attention because of their unusual appearance. But the truth is, green buildings come in all shapes and forms. Design anything you like — you can make it a green building.

Green Buildings Offer No Economic Advantage

The amount of money you can save on energy costs in a green building could pay for the green improvements within one to five years. A 2005 study by Capital E and the University of California, Berkeley, found that any money spent on a green building feature will pay for itself *ten times* over the life of the building. Can you think of any other investment that pays so well?

One Building Doesn't Make a Difference to the Environment

Each snowflake in the avalanche pleads “not guilty.”

Of course, each building makes a difference! Today, buildings are designed to last for 50 to 100 years. Most of the environmental impact comes from the operation of the building, not the construction. A green home uses less water, energy, and materials during its day-to-day operations than a traditional house.

Look at these facts:

- ✓ For every incandescent bulb you replace with a compact fluorescent bulb, you'll save \$30 per year on energy costs.
- ✓ Unplugging your TV, microwave, and DVD player when not in use will save you \$50 a year.
- ✓ Installing a programmable thermostat can save you 30 percent off your heating bills in the winter.

And one house plus another house plus another house adds up:

- ✓ If every home in the United States was insulated, we could completely remove our need for oil from the Middle East.
- ✓ If every home in the United States used an Energy Star refrigerator, we could close ten aging power plants.

Nobody Cares Whether a Building Is Green

New market studies are released each month showing that a majority of people would be willing to pay more for green building features — and even *more* for healthy features. The surging media interest in green building, the rise of new green-themed magazines, and the increasing number of new green materials all show how much in demand green building has become.

In the future, all buildings will be green. Until that time, people are demanding it from their builders, architects, and employers. Which means that home *buyers* are demanding it, too — if your home is green, it'll be more appealing to buyers. And if you're the first green building on your block, you'll have a leg up on your neighbors when it comes time to sell.

Green Buildings Are Just Buildings with Recycled Materials

Although recycled materials are commonly used in green building, recycled stuff alone is not enough. A green building is made up of much more than just recycled materials — it involves water use, energy use, and the indoor air quality.



What you recycle is as important as the act of recycling itself. A countertop made from recycled toxic waste is still toxic waste. As manufacturers race to release new products made out of recycled materials, you need to check whether these materials are healthy. For example, natural rubber comes from a rubber tree and is a natural product. Tire rubber, on the other hand, is actually *vulcanized rubber* (rubber treated with sulfur) and is a toxic material. When a product claims to use recycled rubber, be sure to ask which rubber was used: natural or tire. (The answer you want to hear is natural, of course.)

Don't be fooled by claims from manufacturers offering recycled content. A material containing just 1 percent recycled content can still call itself "recycled." Ask the manufacturer for a Material Safety and Data Sheet (MSDS) to know for sure how much of the material is recycled.

Green Buildings Are Fragile and Require More Maintenance

Durability is an important part of green building. If you build something that'll last, you'll save materials, save energy, and save natural resources — and those are some of the core goals of a green building.

Some people assume that natural materials, because they're soft, aren't durable. Not only are many natural materials durable, but they wear *better* than most synthetic materials. Think of the old wooden floor in your grandparents' house, worn with age. This natural wear adds character to buildings and shows the life inside. Other materials, such as natural linoleum, actually become stronger over time.

The exteriors of green buildings often use natural materials in an exposed and unfinished way. Natural materials have a *patina* (natural aging) to them. This is the reason that copper turns green and cedar shingles turn gray. This natural aging adds to the character of buildings, while also saving money on maintenance.



If you paint something outside, you'll have to repaint it every few years. But if you finish natural materials with a light stain or natural oils, you can let them age naturally with little maintenance.

You Can't Have High-End Design in a Green Building

In the future, all buildings will be green buildings. Whether by necessity, regulation, or choice, every building will be environmentally responsible. But this does not mean the end of well-designed buildings! You can design anything you like, and make it green. Green buildings cut down on energy use, increase water efficiency, improve indoor air, and use materials wisely. None of these things get in the way of designing something beautiful. So go crazy, and design anything you can imagine!

For example, the Gap corporate headquarters in San Bruno, California, offers a green roof with local plants, fresh air, and ultrahigh energy efficiency. But this building has won just as many design awards as it has won green awards. Completed in 1997 by William McDonough, the Gap headquarters exceeds the minimum energy requirements by over 30 percent.

Want another example? The LivingHomes Z6 house in Santa Monica, California, generates its own electricity and recycles its water. Plus, the design is a modern masterpiece. Nothing was sacrificed for the sake of being green.

Chapter 16

Ten Green Things to Do on Every New-Home Project

In This Chapter

- ▶ Identifying items for your home that conserve energy, water, or materials
 - ▶ Developing new standards for any new home project
-

If your head is swimming with new ideas for your green home project, you may not know where to start. In this chapter, I fill you in on ten things you should do *automatically* on every new home. Aside from their just being the green things to do, I've chosen all these measures because they cost the same as their traditional counterparts, have a short payback of less than a few years, or just make sense. Think of them as “best practices” for building your green home.

Turn toward the Sun

When you're building a new home, put some thought into where you position your home on your property and where the windows are located. If possible, orient your home to take advantage of the unchanging path of the sun. In the morning, the light will be coming from the east; in the afternoon, more light and heat will come from the west. Providing light and warmth, the sun can drastically change the comfort of your home. Don't ignore it. A well-positioned home can reduce heating, cooling, lighting, and maintenance costs.



Most of the light and heat from the sun will come from the south. If you're in a hot climate, reduce the size and number of windows and provide overhangs and shading for the remaining windows. In cold climates, place large windows on the side of your house that faces the south. Use the thermal mass of a concrete floor or a thick concrete wall to soak up the heat coming through these south-facing windows. These simple things will keep your home comfortable year-round. (Turn to Chapter 12 for more on using thermal mass.)

Because the sun rises in the east, position rooms that have lots of morning activities — such as the breakfast room — on the east side of the house. The sun sets in the west, so consider placing the dining room on that side so you can watch the sunset as you have dinner. Not only do these ideas make good design sense, they save you from having to turn on the lights during the day.

Use Recycled-Content Drywall

Drywall, also known as gypsum wallboard, is one of the most common materials used in construction today. All the walls in your new home are likely to be covered with drywall. Drywall accounts for more than a quarter of all construction waste, and its chief ingredient, gypsum, has to be mined out of the earth and requires an immense amount of energy to produce. All this effort gives off carbon dioxide and other greenhouse gases.



Drywall made from recycled and synthetic gypsum is now readily available — you just have to ask for it. The backing is made from 100 percent recycled, unbleached paper that is bonded without adhesives onto a gypsum core. Keep in mind the boards come in standard heights of 8 feet, 9 feet, and 10 feet, so if you design to those ceiling heights (or have your architect design to those ceiling heights), you'll reduce cutting and waste.

Here are some recycled-content drywall manufacturers you may want to try:

- ✓ **Georgia-Pacific Building Products**, 55 Park Place, Atlanta, GA 30303 (phone: 800-225-6119 or 404-652-4000; Web: www.gp.com/gypsum)
- ✓ **National Gypsum Company**, 2001 Rexford Rd., Charlotte, NC 28211 (phone: 800-628-4662 or 704-365-7300; e-mail: ng@nationalgypsum.com; Web: www.national-gypsum.com)
- ✓ **Temple-Inland**, P.O. Drawer N, Diboll, TX 75941 (phone: 800-231-6060; e-mail: mktgcomm@templeinland.com; Web: www.temple.com/gypsum)
- ✓ **USG**, c/o Corporate Secretary, 550 W. Adams St., Chicago, IL 60661-3676 (phone: 800-874-4968; e-mail: usg4you@usg.com; Web: www.usg.com)

Stuff the Walls with the Right Kind of Insulation

The inside of your walls should be filled with insulation — and when it comes to insulation, the more the better. Although insulation lowers your energy bills, most traditional fiberglass insulation contains a phenol-formaldehyde binder, which releases harmful chemicals. In addition, the airborne fibers are a health hazard.



As an alternative to fiberglass, consider using a natural insulation made from recycled cotton. Unlike fiberglass, recycled cotton insulation has no microfibers that cause health problems. Another option is cellulose insulation, which is made from recycled newspaper and blows in easily.

Use only formaldehyde-free or recycled-content insulation. Most fiberglass insulation already has at least 30 percent recycled content, but ask for insulation with the highest amount of recycled content available. Be sure to insulate your attic and the edges of the concrete floor slab — most people forget them. Use as much insulation as will fit into your walls — but don't stuff or pack it in: Insulation needs to be fluffy in order to work.



While you're up in the attic, install a radiant barrier on your roof. It'll save even more off your energy bill. (You can find more energy-saving tips in Chapters 11 and 12.)

Some healthy insulation manufacturers include the following:

✓ Formaldehyde-free insulation:

- **CertainTeed**, P.O. Box 860, 750 E. Swedesford Rd., Valley Forge, PA 19482 (phone: 800-782-8777; Web: www.certainteed.com)
- **Johns Manville**, P.O. Box 5108, Denver, CO 80217-5108 (phone: 800-654-3103; Web: www.jm.com)

✓ Natural cotton insulation:

- **Bonded Logic**, 411 E. Ray Rd., Chandler, AZ 85225 (phone: 480-812-9114; Web: www.bondedlogic.com)
- **Insulcot Insulation**, 411 S. Fox St., Post, TX 79356 (phone: 806-777-2811; Web: www.insulcot.com)

✓ Cellulose insulation:

- **Clayville Insulation**, P.O. Box 713, Burley, ID 83318 (phone: 800-584-9022; Web: www.safelink.net/clayinsu/index.html)

- **Energy Control, Inc.**, 804 W. Mill St., Ossian, IN 46777 (phone: 800-451-6429)
- **Igloo Cellulose**, 195 Brunswick, Pointe-Claire, Québec, Canada H9R 4Z1 (phone: 800-363-7876; Web: www.cellulose.com)
- **International Cellulose**, P.O. Box 450006, 12315 Robin Blvd., Houston, TX 77245-0006 (phone: 800-444-1252; Web: www.spray-on.com)

Choose Healthy Paints

People spend 80 percent to 90 percent of their time indoors, so the quality of the indoor air is important to our health. Common paints, adhesives, and floor finishes contain *volatile organic compounds* (VOCs), which are known carcinogens that are directly related to asthma in children.



Most major manufacturers now offer low-VOC products, but *low* only means “lower than normal.” Look for *very-low-VOC* or preferably *zero-VOC* paints and adhesives.



Healthy paint manufacturers include

- ✓ **AFM (makers of Safecoat)**, 3251 Third Ave., San Diego, CA 92103 (phone: 800-239-0321 or 619-239-0321; e-mail: info@afmsafecoat.com; Web: www.afmsafecoat.com)
- ✓ **Antique Drapery Rod Company (makers of Healthy Paint)**, 2263 Valdina St., Dallas, TX 75207 (phone: 214-653-1733; Web: www.anticuedraperyrod.com)
- ✓ **Benjamin Moore (makers of Eco Spec)**, 101 Paragon Dr., Montvale, NJ 07645 (phone: 800-344-0400; e-mail: info@benjaminmoore.com; Web: www.benjaminmoore.com)
- ✓ **Best Paint**, 1728 Fourth Ave. S., Seattle, WA 98134 (phone: 206-783-9938; e-mail: paint@bestpaintco.com; Web: www.bestpaintco.com)
- ✓ **BioShield Paint**, 3215 Rufina St., Santa Fe, NM 87507 (phone: 800-621-2591; Web: www.bioshieldpaint.com)
- ✓ **Chem-Safe Products Company (makers of Enviro-Safe Paint)**, HC32 Box 122, Uvalde, TX 78801 (phone: 888-281-6467; Web: www.envirosafepaint.com)
- ✓ **Duron Paints & Wallcoverings (makers of Genesis Odor-Free)**, 10406 Tucker St., Beltsville, MD 20705 (phone: 800-723-8766; e-mail: paintinfo@duro.com; Web: www.duron.com)
- ✓ **Kelly-Moore Paints (makers of Enviro-Cote)**, 987 Commercial St., San Carlos, CA 94070 (phone: 888-677-2468; Web: www.kellymoore.com)

Change Your Concrete Mix

Every construction project uses concrete in one way or another. Concrete is a mixture of sand, water, stone, and Portland cement. The cement is the key ingredient in concrete — acting as the binding agent — but it requires a great deal of energy from mining, grinding up, and heating. Cement production alone is responsible for 5 percent to 10 percent of all greenhouse gas emissions.



Replace up to 50 percent of the Portland cement in your concrete with fly ash. *Fly ash* is the fine powder residue by-product from coal-fired, electric-generating plants. Because the burning of coal provides up to 85 percent of your electricity (depending on where you live), a great deal of fly ash is produced.

Currently, the fly ash is released into the air, buried in a landfill, or illegally dumped into the ocean. All this leaks mercury into the food supply. But you can take this waste product and use it to substitute for 20 percent to 50 percent of the Portland cement in the concrete mix, which not only reduces the amount of fly ash released into the environment, but reduces the expenditure of energy on mining, grinding up, and heating Portland cement.

Pick the Right Toilet

Toilets use 40 percent of the water in the average home. You'd never think of flushing gasoline down the toilet, yet clean drinking water costs more per gallon. The average toilet uses 3½ gallons of fresh drinking water for every flush, and the average household in the United States consumes nearly 300 gallons of clean drinking water a day, most of which goes down the toilet.



Choose dual-flush toilets for your home. Here's how it works: For liquids, lift the handle and only ½ gallon goes down the drain; for solids, push the handle down and the full 1½ gallons is used. Every major toilet manufacturer now offers dual-flush models at the same cost. At the very least, choose low-flow toilets using only 1½ gallons per flush.

If you keep your existing toilets, kits are available to retrofit them into dual-flush or low-flow models for as little as \$5 (see www.twoflush.com or www.niagaraconservation.com).

Heat Your Water with the Sun

Making sure you have instant hot water available any time is expensive. It costs you 17 percent of your heating bill. A typical water heater runs all day, even when you don't need hot water, making it more wasteful.



A solar water heater sits on the south-facing side of your roof, has no moving parts, and has virtually no maintenance. The sun preheats the water and sends it to a conventional water heater for storage, reducing the need for using any energy.

Solar water heater manufacturers include

- ✓ **Dawn Solar Systems**, 183 Rte. 125, Suite A-7, Brentwood, NH 03833 (phone: 866-338-2018 or 603-642-7897; Web: www.dawnsolar.com)
- ✓ **Heliodyne**, 4910 Seaport Ave., Richmond, CA 94804 (phone: 510-237-9614, e-mail: sales@heliodyne.com; Web: www.heliodyne.com)
- ✓ **Rheem Water Heating**, 1100 Abernathy Rd., Suite 1400, Atlanta, GA 30328 (phone: 334-260-1586; Web: <http://waterheating.rheem.com>)
- ✓ **SunEarth**, 8425 Almeria Ave., Fontana, CA 92335 (phone: 909-434-3100; Web: www.sunearthinc.com)



If a solar water heater sounds out of reach, consider an on-demand hot water system. In a typical home in the United States, up to 10,000 gallons of water are wasted each year waiting for hot water to reach the tap. The on-demand system is tankless, and it only heats the water you need. It runs only when you use the hot water faucet, saving you hundreds of dollars a year.

Recycle Construction Waste

Construction waste takes up a large portion of valuable landfill space. Nearly all this could be recycled if handled properly. The high cost of disposal is finally forcing builders to rethink their approach to construction waste.



Organize construction waste into piles for possible reuse during construction or simple salvage after. Contact local salvage yards to take away any old appliances, fixtures, doors, and windows you don't reuse or useful scraps of building materials. Any remaining waste should be sorted for recycling at the dump. Many cities are now requiring recycling of construction waste.

Choose Your Carpet Carefully

Carpet is an environmental problem. Typically made from synthetic, oil-based materials, carpets release harmful chemicals. They're usually backed with vinyl, making them unhealthy and nearly impossible to recycle. Wall-to-wall carpet creates a place for mold, pests, and allergens to reside. With their short life span, carpets are responsible for sending 4 billion pounds of waste to the landfill each year.



Use natural fiber carpets from companies with recycling take-back programs. Avoid any carpet with a vinyl backing. Try using carpet tile instead of wall-to-wall carpeting; you can replace damaged tiles individually without having to replace an entire floor. (Of course, avoiding carpet altogether would be best.) Select a natural padding below the carpet to avoid using toxic and difficult-to-remove adhesives.



Healthy carpet manufacturers include

- ✓ **Bentley Prince Street**, 14641 E. Don Julian Rd., City of Industry, CA 91746 (phone: 800-423-4709; Web: www.bentleyprincestreet.com)
- ✓ **InterfaceFLOR**, 1503 Orchard Hill Rd., LaGrange, GA 30240 (phone: 866-281-3567; Web: www.interfaceflooring.com)
- ✓ **J&J/Invision**, 818 J&J Dr., P.O. Box 1287, Dalton, GA 30722 (phone: 800-241-4585; Web: www.jj-invision.com)
- ✓ **Milliken Carpet**, P.O. Box 1926, Spartanburg, SC 29304 (phone: 800-241-4826; Web: www.milliken.com)
- ✓ **Mohawk Industries**, P.O. Box 12069, Calhoun, GA 30703 (phone: 800-266-4295; Web: www.mohawkind.com)
- ✓ **Shaw Contract Group**, 380 S. Industrial Blvd., Calhoun, GA 30701 (phone: 800-257-7429; Web: www.shawcontract.com)

Watch Your Plywood

Used for siding, flooring underlayment, and cabinetry, plywood is a versatile and popular material. Plywood consists of wood cut into thin layers that are alternately glued together. Typically, the wood comes from newly cut trees. The adhesives are typically toxic and contain formaldehyde, which releases unhealthy chemicals.



All plywood used should carry the FSC label (meaning that it's certified by the Forest Stewardship Council) to ensure that sustainable practices were used in the extraction of the wood.



Oriented-strand board (OSB) is an efficient alternative use of wood because it is produced from small pieces and low-grade species of wood. The same concerns about using nontoxic adhesives still apply, however.

For any wood you choose, select nontoxic glue and formaldehyde-free boards.

Chapter 17

Ten Green Materials You Can't Live Without

In This Chapter

- ▶ Discovering unique and beautiful green products
 - ▶ Locating green alternatives for standard construction materials
-

If you're like most homeowners, you probably don't have strong feelings about toilets, roofing, or siding . . . but your eyes always light up when the subject of finishes comes up. If that sounds familiar, you've come to the right chapter. Here, I fill you in on ten gorgeous materials you should consider for every construction project. Order samples of each — when you see these in person, you'll fall in love with them.



As I often tell my clients, being green is not a black-and-white issue. Nearly every product has some good green characteristics and some not-so-green characteristics. There is no perfect material with zero impact on the planet. As you look through the list, try to figure out which material works best for *your* needs.

Recycled-Paper Countertops

Made from recycled paper and a resin binder, these composite countertops have a warm, neutral look that fits well with most decorating styles. This material looks similar to other popular solid-surface countertops like Corian, but because they're only about one-third plastic, they have a more natural look and feel. Many people compare these green alternatives to soapstone.

You can have special features incorporated into the countertops, such as a drain board next to an under-mount sink, or casting metal rods near the stove, creating a built-in trivet.

Manufacturers of recycled-paper countertops include

- ✔ **Paneltech International**, 2999 John Stevens Way, Hoquiam, WA 98550 (phone: 360-538-9815; Web: www.kliptech.com/index.shtml; e-mail: info@kliptech.com)
- ✔ **Richlite Company**, 624 E. 15th St., Tacoma, WA 98421 (phone: 888-383-5533; Web: www.richlite.com; e-mail: info@richlite.com)

Recycled Glass Terrazzo

Terrazzo typically consists of small pieces of marble set into cement, which is then highly polished. Instead of marble, several manufacturers have discovered using recycled glass instead. The result is an ethereal surface so beautiful that you won't notice that this particular glass happens to be made from recycled soda bottles. You can choose the colors of both the glass and the cement binder, giving you an endless list of possibilities. The surface is durable, heatproof, and easy to maintain.

Manufacturers of recycled-glass terrazzo include

- ✔ **Vetrazzo**, Ford Point, Suite 1400, 1414 Harbour Way S., Richmond, CA 94804 (phone: 510-234-5550; Web: www.vetrazzo.com; e-mail: info@vetrazzo.com)
- ✔ **IceStone**, Brooklyn Navy Yard, 63 Flushing Ave., Unit 283, Building 12, Brooklyn, NY 11205 (phone: 718-624-4900; Web: www.icestone.biz; e-mail: info@icestone.biz)
- ✔ **EnviroGLAS**, 5048 Tennyson Pkwy., Suite 202, Plano, TX 75024 (phone: 888-523-7894 or 972-473-3725; Web: www.enviroglasproducts.com; e-mail: communications@enviroglasproducts.com)

Recycled-Glass Tiles

These gemlike tiles are so gorgeous that you'd want them even if they *weren't* made from recycled glass. The glass is from broken, discarded windows, which is then crushed to a sandlike texture and mixed with other ingredients, including minerals that add color. The process uses far less energy than fired ceramic tile. Although the surface is smooth, a slight pebbly texture appears to be embedded in the interior of the tiles. Perfect for a tiled wall or counter backsplash, these tiles add color and texture to any room.

Manufacturers of recycled-glass tiles include

- ✓ **Bedrock Industries**, 1401 W. Garfield St., Seattle, WA 98119 (phone: 877-283-7625 or 206-283-7625; Web: www.bedrockindustries.com; e-mail: info@bedrockindustries.com)
- ✓ **Oceanside Glasstile**, 2293 Cosmos Court, Carlsbad, CA 92011 (phone: 760-929-4000; Web: www.glasstile.com; e-mail: info@glasstile.com)

Eco Resin Panels

These recycled and recyclable plastic panels are available in an endless variety of thicknesses, sizes, textures, and colors. You can embed anything you want inside the panel — from bamboo stalks to rose petals to your favorite cartoons — giving you an infinite number of home-décor possibilities. Instead of a wall, consider these panels for a clever room divider. Hide your clutter by using them in cabinet doors. Create a unique shower enclosure with these beautiful panels.

Manufacturers of eco resin panels include

- ✓ **3form**, 2300 S. 2300 W., Suite B, Salt Lake City, UT 84119 (phone: 800-726-0126 or 801-649-2500; Web: www.3-form.com; e-mail: info@3-form.com)
- ✓ **Veritas**, 6200 49th St. N., Pinellas Park, FL 33781 (phone: 877-411-8008 or 727-521-2393 ext. 227; Web: www.veritasideas.com)

Kirei Board

With a look similar to exotic plywood, Kirei Board is not made of wood at all. Formed from pressed stalks of rice sorghum, *kirei* is cellulose from an agricultural waste material, the by-product of rice farming. You can use the boards for everything from furniture to cabinetry, and because no glues are needed in their manufacture, they're healthy for you and your family as well.

The manufacturer of Kirei Board is Kirei, 1805 Newton Ave., San Diego, CA 92113 (phone: 619-236-9924; Web: www.kireiusa.com; e-mail: info@kireiusa.com).

Earthen-Clay Plaster

White walls are boring, show dirt, and need to be repainted every few years. Cover your walls in this natural plaster finish to add color and depth to your home. This all-natural material doesn't give off any harmful chemicals, and adds style and beauty to your walls.

Manufacturers of earthen-clay plaster include

- ✓ **American Clay Enterprises**, 2601 Karsten Court SE, Albuquerque, NM 87102 (phone: 866-404-1634; Web: www.americanclay.com; e-mail: sales@americanclay.com)
- ✓ **TransMineral USA**, 501 Lakeville St., Suite F, Petaluma, CA 94952 (phone: 707-769-0661; Web: www.limes.us; e-mail: transmin@sonic.net)

Bamboo Flooring

Bamboo is a rapidly growing grass harvested by cutting the stalks. Unlike with trees, the bamboo is not killed in the process, making it sustainable. Although it looks very similar to a traditional wood floor, bamboo has a distinctive knuckle in the grain. It's available in solid and engineered flooring options from dozens of different manufacturers.



Be sure to choose a floor made completely of solid bamboo, with nontoxic glues and sealers.

Manufacturers of bamboo flooring include

- ✓ **EcoTimber**, 1611 Fourth St., San Rafael, CA 94901 (phone: 415-258-8454; Web: www.ecotimber.com)
- ✓ **Smith & Fong**, 375 Oyster Point Blvd. #3, South San Francisco, CA 94080 (phone: 866-835-9859 or 650-872-1184; Web: www.plyboo.com; e-mail: sales@plyboo.com)

Linoleum Flooring

Made from sawdust and linseed oil, linoleum is a safe and natural product. Vinyl floors are cheap, but they only last a few years and are toxic in their production. Natural linoleum, however, is durable, easier to clean than vinyl, and naturally antistatic. Because it hardens with age, some homeowners have reported over 50 years of use from their linoleum floors.

One manufacturer of natural linoleum flooring is Forbo Linoleum, Humboldt Industrial Park, P.O. Box 667, Hazleton, PA 18201 (phone: 570-459-0771; Web: www.forbo-flooring.com or www.forbolinoleumna.com; e-mail: info@fl.na.com)

Cork Flooring

Traditionally, cork flooring is made from the bark of a cork tree. Because harvesting the bark doesn't hurt the tree, and the bark grows back quickly, cork is considered a sustainable material. Several manufacturers now offer cork flooring made from recycled wine bottle corks in a wide variety of patterns.

Manufacturers of cork flooring include

- ✓ **Expanko Cork**, 1129 W. Lincoln Hwy., Coatesville, PA 19320 (phone: 800-345-6202; Web: www.expanko.com; e-mail: sales@expanko.com)
- ✓ **Natural Cork**, 1710 N. Leg Court, Augusta, GA 30909 (phone: 800-404-2675 or 706-733-6120; Web: www.naturalcork.com)

Recycled Denim Cotton Insulation

Although it lives hidden inside your walls, insulation is an important part of any green home. In addition to lowering your heating bills, natural cotton insulation is healthier for your family. This formaldehyde-free product is made from recycled blue jeans, giving it its blue color.

Manufacturers of recycled denim cotton insulation include

- ✓ **Bonded Logic**, 411 E. Ray Rd., Chandler, AZ 85225 (phone: 480-812-9114; Web: www.bondedlogic.com)
- ✓ **Inno-Therm**, 1633 Shea Rd., Newton, NC 28658 (phone: 877-466-0612; Web: www.inno-therm.com)

Chapter 18

Ten Green Things You Can Do in Your Home Right Now

In This Chapter

- ▶ Cutting down on your energy and water usage
 - ▶ Upgrading each area of your home to save you money
-

If you're building a brand-new home, you could easily do all the things I discuss in this book to make your new home green. But what if you're not building a new house? What if the house you live in isn't exactly green? If your home isn't green, it's losing money. Most people think that their current homes can't be greened. But there are many simple things you can do to reduce energy use, conserve water, and save money in your current home.

Each of the items in this chapter is a weekend project you can do with the entire family.

Replace Your Old Appliances with New Energy-Efficient Ones

If your appliances were purchased before 1990, you're spending a lot more on energy than you need to, and it's time to upgrade them.

A new Energy Star refrigerator consumes 75 percent less energy than one from the 1970s, saving you more than \$100 a year. Because you're getting a new one anyway, locate the refrigerator away from direct sunlight and the oven. In the winter, turn up the refrigerator temperature and save yourself even more money.



While you're shopping, keep in mind that bigger is not better — at least where refrigerators are concerned. Size your new refrigerator for what you actually *need*. A model with an upper or lower freezer uses 10 percent to 15 percent less energy than a side-by-side model.

Energy Star dishwashers are designed to use less water than hand washing. To take full advantage of this feature, only run your new Energy Star dishwasher when it's full.

An Energy Star washing machine uses half the energy of a model made before 1990, saving you about \$110 a year. Also, front-loading washers use less water than top-loaders.



Some states and local utility companies offer rebates for buying new Energy Star appliances. You can save hundreds off the purchase of that new appliance! Find your local rebates at www.energystar.gov/index.cfm?fuseaction=rebate.rebate_locator.

Buy a Water Filter instead of Bottled Water

The average American consumes about 23 gallons of bottled water every year. The plastic bottle and the energy required to ship it all take their toll on the planet. Instead of buying bottled water, save your money — and the environment — and purchase a water filter for your kitchen.

A freestanding pitcher with a built-in filter will cost you about \$12 to \$15; one that attaches directly to your kitchen faucet will run you about \$20 to \$30. If you're feeling more ambitious, a whole-house water filter will clean all the water in your home, including the water for the shower and laundry.

Install Water-Saving Devices in Your Bathroom and Kitchen

The typical four-person household uses about 260 gallons of water every day. Most of this water is used in the bathroom. You can take some steps to save an incredible amount of water. Here's a list of simple things you and your family can do today:

- ✔ **Be sure to turn off the faucet while you're brushing your teeth or shaving.**
- ✔ **Take quick showers instead of baths, and switch to a low-flow showerhead.** An efficient showerhead can cost less than \$15 and cuts annual water consumption by half. You can install one in minutes, and it'll save you an estimated \$10 per person every year from the water-heating savings alone.
- ✔ **Install an aerator on every bathroom faucet.** An aerator is a small screen that attaches to the end of a faucet. It will cost you about \$2 and you can install it in one minute.
- ✔ **If you're handy, consider replacing your old 5-gallon-per-flush toilet with a new 1.6-gallon-per-flush toilet or a dual-flush toilet.** That can save 22,000 gallons of water per year for a family of four.



Until you replace the toilet, fill a 2-liter plastic soda bottle with water and set it inside the toilet tank. It will save that amount of water with every flush.

Install a Solar-Powered Clothes Dryer (a.k.a., a Clothesline)

Instead of running your clothes dryer every time you do a load of laundry, invest \$5 in a clothesline. A clothesline is free to operate and will leave your clothes smelling fresh. Save the dryer for rainy days — and when you do use your clothes dryer, keep the lint traps clear to save energy.



While you're doing the laundry, run only full loads, using warm water instead of hot.

Insulate in Normally Forgotten Locations: Pipes, Water Heater, and Attic

Water heaters consume nearly 20 percent of all the energy used in your home. They run all day, even if you don't need any hot water. To cut that water-heating bill in half, turn down your water heater to 120°F and insulate it with a wrap blanket, available at any hardware store. Just be careful not to cover the air vents.



If your gas water heater is more than ten years old, it's inefficient and should be replaced. When shopping for a new water heater, choose one with a timer so it only heats water when your family needs it.

While you're down in the basement, add insulation wrap to the hot water pipes, especially if they run in a crawl space. It takes minutes to do, but will save you noticeably on your water-heating bill.

If your home was built before 1981, chances are you have inadequate insulation in your attic. Place insulation between both the floor joists and roof joists in the attic. Although any insulation will do, spray-in natural cellulose made from recycled newsprint is the best choice for the attic floor; formaldehyde-free or recycled cotton batt insulation is best for the roof. Be sure to install the insulation with the foil side facing the sun.

While you're up there, install a solar attic fan. For around \$300, this exhaust fan operates from a small solar cell that sits hidden on your roof. When it gets too hot and stuffy in the attic, the fan kicks on automatically to vent the hot air from your attic.

Go Green with Your Yard

From mowing, to watering, to fertilizing, lawns consume an immense amount of resources and are responsible for an equally offensive amount of pollution. Lawn mowers create 5 percent of the nation's air pollution. Don't forget about the gas, toxic pesticides, and grass clippings that are also part of caring for your lawn.



Switch to an old-fashioned hand-powered mower. The exercise is good for you and it will save you money on gas.

Watering your lawn consumes 30 percent to 60 percent of all your summer water use. If you want to use the sprinkler, use it at night. The sun evaporates most of the water you spray on the lawn anyway. Better yet, install a drip irrigation system. It uses less water, and brings the water to the roots, where it's needed.

If all this information is starting to make you rethink your lawn, you aren't alone. People are giving up their lawn to plant native species turf, nicknamed *ecoturf*. Because these plants are local to your area, they can grow without needing to be cut or watered. A landscape architect can talk to you about the options in your area.

Convert Your Wood-Burning Fireplace to a Gas Fireplace

Wood-burning fireplaces have long been a sentimental vision of home. But in recent years, local building codes have banned their use, preferring the cleaner-burning gas fireplace. Convert your old, dirty wood-burning fireplace to an energy-efficient gas model. Be sure to install glass fireplace doors, they keep gases from entering the room and block heat from escaping up through an open flue.



Attach a small metal hanger in your fireplace to indicate when the flue is open. In most homes, the flue is left open, which results in a huge energy loss. So be sure to keep the flue closed when the fireplace is not in use.

If you keep your old wood-burning fireplace, instead of using petroleum-based premanufactured logs, look for eco-friendly versions, like the Java-Log made from recycled, dried coffee grounds. (For information on the Java-Log and to find stores in your area that carry them, check out www.java-log.com.)

Weatherize Your Windows and Doors

Windows provide views, sunlight, ventilation, and solar heating, but they also let 10 percent to 25 percent of your heating leak outside. Because the glass in the window doesn't hold in temperatures as well as your walls, consider caulking and sealing around them to fill any air leaks.

If you live in a warm climate, install tinted window films on south- and west-facing windows that get the most heat gain. For better performance, consider installing an awning or overhang on really hot windows.



Planting a tree in front of the window provides shade and makes your home more attractive.

If you live in a colder climate, install plastic sheeting to cover the window and keep out any drafts. For even better performance, have storm windows installed. It costs more, but you'll be much more comfortable in the winter.

Make Your Heating and Cooling Work Better

If you added up all the cracks in a typical house, it would be equivalent in size to leaving an entire window wide open all winter long. The good news: You can fill these cracks with caulk, sealants, and weather-stripping. This job is one of the easiest and quickest things you can do to improve the energy use in your home.

One-third of the heat in your home is leaking out of your ducts. Seal the joints in your ductwork with low-toxic mastic compound. Avoid using duct tape — ironically, duct tape is not good for ducts.



Also, be sure to clean the air-conditioner filter regularly.

If you shade the air-conditioner, it won't have to work as hard.

Use ceiling fans instead of air-conditioners when possible. Look for a ceiling fan with two settings: winter and summer (to pull air up or push it down).

Clean or replace furnace filters each month of use. This simple measure will easily save you 5 percent to 10 percent on heating and remove allergens from your home.

The thermostat is another large hole in your wall that allows air to leak out. Put a foam gasket behind your thermostat so it reads the actual room temperature instead of the colder temperature inside the wall.

A programmable thermostat is inexpensive and ensures that the heater or air-conditioner runs only during specific times. For example, instead of running the heater all night, a programmable thermostat can turn on the heat a couple of hours before you get up, which can save you 30 percent off your heating bills.

Switch to Compact Fluorescent Light Bulbs and Install Occupancy Sensors

Switch your incandescent bulbs to compact fluorescent (CFL) bulbs. CFL bulbs use a fraction of the energy of their incandescent counterparts, produce 70 percent less heat, and last ten times longer than traditional bulbs. All this saves you \$30 or more over the life of *each* bulb.

Prices of CFL bulbs have dropped. They now cost nearly the same as their less-efficient incandescent bulbs. Where a CFL will cost you \$10 in electricity during its lifetime, an incandescent will use up \$40 in the same time period. If every American home replaced just one light bulb with a CFL bulb, the United States would save enough energy to light more than 2.5 million homes for a year.

Kids have a habit of leaving lights on. Teach them not to. Better yet, install occupancy sensor switches to automatically shut off the lights when people leave the room. They're ideal for mud rooms, powder rooms, playrooms, garages, basements, and anywhere else your kids — or you! — may forget to turn off the lights.



Dimmer switches can save energy and extend bulb life. The energy saved is not quite proportional to the amount you dim. A light dimmed down to one quarter of its input still uses half the energy.



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