

GREEN LIVING BY DESIGN

The Practical Guide for Eco-Friendly Remodeling and Decorating

JEAN NAYAR



POINTCLICKHOME

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FOREWORD

In 1983, my family and I built a vacation home in the Pocono Mountains with material salvaged from a building my father demolished in Philadelphia. Massive wood beams, reclaimed framing lumber, steel, even nails were reused and reconfigured to make what I think of as our first “sustainable” building, though we didn’t think of it as such at the time.

This was an important lesson to learn as a first-year architecture student. The essence of living and building “green,” for us, has always been about living and building thoughtfully, creatively, efficiently and sensibly. We have never considered “green” living as an alternative lifestyle or our buildings as novelty products. We think of them as commonplace and common sense. Considering the impact of global warming on our planet, the fluctuation in non renewable fuel costs, the impact of the wars fought to protect those non renewable resources and national security threats as a result of such wars, one begins to wonder if we have forgotten the meaning of common sense. The question is not *What is the cost of “living green”?*, but rather *What is the cost of living otherwise?*

My brothers, a lifelong friend and I run a small and energetic development, design and construction company in Philadelphia and have, since 1997, worked and lived by the fundamental precept that “green” design is first and most important! “great” design, and that great design does not have to cost more than poor design. Poor design is simply design that doesn’t respond appropriately to one’s environment—we think of it as “ir-responsible.” On the other hand, “responsibility” in design might simply involve orienting a building respectfully and effectively on its site, or thoughtfully bringing natural light and ventilation into a room, or putting a garden on one’s roof (we call it a “groof”) to reduce heating/cooling loads and storm-water runoff and double the outdoor garden space of the site. It could also mean planting low-maintenance, drought-tolerant and native plants around your home, or heating a floor surface (and therefore your body) rather than a volume of space (and therefore your head). It could be as simple as using paints and sealants that don’t contain harmful chemicals or working with materials and people that are local, or it could involve long-term approaches, such as collecting

rainwater and reusing it to irrigate your lawn, or generating heat and power from the sun for free rather than paying for it from a coal burning utility company. These all seem like intelligent, rational, cost-effective and “natural” ways of being, thinking and designing, don’t they?

For architects, these kinds of ideas are woven into the fabric of what we do on a daily basis. But for the rest of the world, sorting through the ever-evolving ways in which one chooses to live a greener life can be challenging at best. So a clearly organized, informed book such as *Green Living by Design* helps us bridge the gaps in the ways we communicate, enriching the dialogue not only among ourselves as designers, but also with our clients.

When my brother Mike asked us to design the Margarido House in Oakland, California, he and his wife wanted a home that would fulfill the needs of their growing family for years to come. They wanted a home that would inspire them and their children every day, one that would make them conscious of their connection with the natural world rather than their struggle with it. They also wanted their home to be a model of sustainable living for others, inspiring them to educate themselves on the choices they have in creating a healthy home. Parts of the home we created for them appear in the pages of this book, which we believe will help to make sustainable ways of designing and living as commonplace and accessible as they are inspiring.

I look forward to the day when “green” is not the new “black,” as it has been so often described lately, but rather the old “blue,” tried and true. And *Green Living by Design* will surely serve as a helpful guide to that end. Logically organized and easy to understand, it is an excellent primer on the essentials of living sustainably. We trust the ideas in its pages will open many new “green” doors for the reader, which, once entered, will be impossible to exit.

Timothy McDonald

Principal of Onion Flats/Plumbob, LLC, Architect of Record for the Margarido House in Oakland, the first LEED-H Platinum custom home in Northern California



A photograph of a modern, single-story house with a light-colored stucco exterior and a dark brown shingled roof. A prominent white chimney rises from the roofline. The house features large windows and a covered porch area. In the foreground, a low stone retaining wall separates the lawn from the house. The lawn is green with some small plants and a black metal fence is visible in the bottom right corner. The sky is blue with some clouds, and trees are visible in the background.

Creating a Green Home

WHY GO GREEN?



Previous page: Rather than razing this house, architect Joseph Eisner adapted it within its original footprint, adding new energy-efficient windows and doors.

Above: Leaving a portion of the roof open on an enclosed terrace surrounded by efficient windows and finished with natural materials literally brings the outdoors in.

There are so many benefits to living in a green home, and more and more Americans are choosing to take advantage of them. Living in a green home is good for your health. It's good for your pocketbook—tax incentives and energy savings can make building and living in a new green home or greening an existing home less costly than building and living in a standard house. And, of course, it's good for the planet. According to a recent study, green homes are expected to make up 10 percent of new home construction by 2010, up from 2 percent in 2005. Consider these specific benefits:

Green Homes Are Healthier

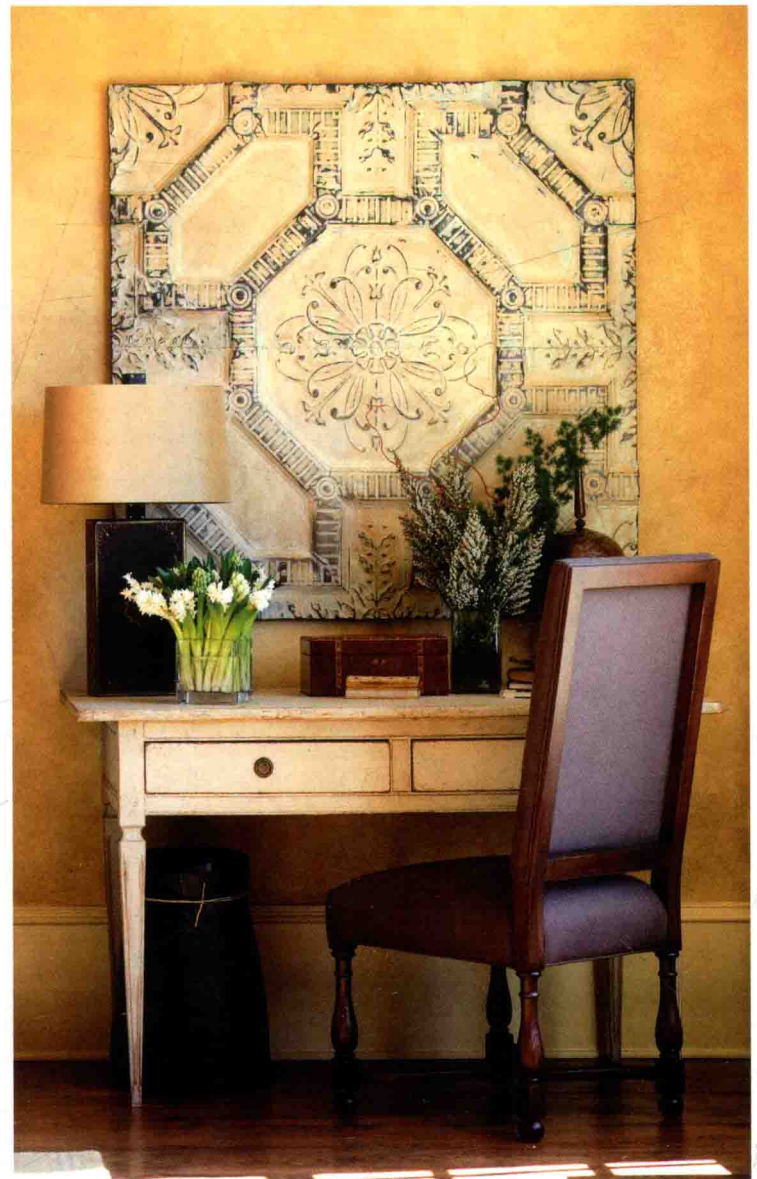
- Natural ventilation as well as the use of mechanical ventilation systems—which bring in and filter fresh air and vent out stale air—keep indoor air clean.
- The use of toxin-free materials and finishes or those with low toxicity limits indoor air pollution, which can be more harmful than outdoor pollution.
- Abundant natural light boosts your mood and is vital to indoor plants, which are natural air detoxifiers.
- Some green materials and home products resist mold and mildew or are antimicrobial.

Green Homes Are Cost Efficient

- On a month-to-month basis, people who live in green homes save money by using less energy and less water than those who live in standard homes.
- A green home can be more durable than most standard homes thanks to high-quality building materials and construction processes, which lead to lower maintenance costs and fewer repairs.
- The value of a green home is often higher than that of a comparable standard home, particularly because the market demand for green homes is on the rise. Some green apartment buildings, for example, bring in rents 10 to 15 percent higher than market rates, and some LEED-certified

homes (see page 13) in green developments have outsold the competition 2 to 1.

- Local, state and federal governments as well as utilities are beginning to offer tax breaks and other incentives for building certified green homes or adding green features to your home, as long as they meet accepted green guidelines (of which there are many).
- In the near future, green homes will likely cost less to insure than standard homes. More insurance companies are offering discounts on policies for green homes. By the same token, numerous mortgage companies offer discounted loan rates for homebuyers buying green homes.



Left: High-performance windows and cedar shingles combine character with environmental consciousness.

Above: One approach to creating eco-friendly interiors is to use architectural salvage as art, as designer Janie Hirsch did in this compact home office space.

Green Homes Are Easy on the Earth

- Green homes can use up to 40 less energy than similar standard homes. Some experts suggest that future green homes could even be designed to produce more energy than they consume, through energy harvesting devices such as solar panels or wind turbines.
- Drought-tolerant landscaping, efficient plumbing and bathing fixtures, and water-conservation systems enable green homes to use less water than standard homes.
- Fewer nonrenewable natural resources are used to construct a green home. Many green building materials are made with recycled content. Salvaged materials from demolished buildings are also often used in green homes, as are materials made from rapidly renewable materials, such as bamboo, hemp and soybean-based products. In addition, the use of specially certified woods



helps promote socially and environmentally beneficial forestry practices.

- The construction of a new standard 2,500-square-foot home generates approximately 2 tons of construction waste that typically ends up in landfills. As a result of recycling practices, green home construction reduces waste.

Left: Energy-efficient light fixtures and natural light streaming through ample windows provide eco-friendly illumination in a bathroom designed by architect Joseph Eisner. Above: Natural light flows freely through a staircase,

minimizing the need for artificial illumination. Opposite, above: Beautiful, energy-efficient windows add charm and function. Opposite, below: Eco-friendly silk textiles from Lulan enhance a bed with beauty and sustainability.

Incentives Make It Easy to Be Green

Not so long ago, professionals knowledgeable about green design and green building products weren't as commonplace as they are today, so the upfront costs of building a green home were at a premium. But with increasing interest in and growing demand for green design, the cost of owning a green home can be comparable to—or sometimes even cheaper than—owning a standard home, especially when you factor in the upfront green building tax breaks and incentives, and long-term energy savings. For more information on the many local and state governments, utility companies and other entities that offer rebates, tax breaks and other incentives in your area, visit these websites:

- energy.gov/taxbreaks.htm As a result of the Energy Policy Act of 2005, the U.S. government offers various tax breaks and incentives for efficiency upgrades to homes.
- dsireusa.org The Database of State Incentives for Renewables & Efficiency is a nonprofit project funded by the U.S. Department of Energy through the North Carolina Solar Center and the Interstate Renewable Energy Council. It provides information on local, state, federal and utility incentives available for switching to renewable or efficient energy.
- epa.gov/greenbuilding/tools/funding.htm The U.S. Environmental Protection Agency's site offers information on many of the sources of funding for green building available at the national, state and local levels for homeowners, industry, government organizations and nonprofits in the form of grants, tax credits, loans and other sources.
- energystar.gov/taxcredits The U.S. government's site for its Energy Star program provides insight on how consumers, home builders and others can get federal tax credits for using energy-efficient products.
- www.usgbc.org/PublicPolicy/SearchPublicPolicies.aspx?PageID=1776 This link within the U.S. Green Building Council's site will help you find local incentives for building LEED-certified buildings, including homes. (LEED stands for Leadership in Energy and Environmental Design, which was developed by the USGBC and defines criteria for green design. It is generally considered the gold standard by which environmental design is judged.)

