

A living room interior with a stone fireplace on the left, a patterned sofa in the foreground, and a side table with a lamp and flowers in the background. A decorative wall panel is mounted above the side table. A green banner with the text "What's Inside?" is overlaid on the right side of the image.

What's Inside?



WHAT IS SUSTAINABLE DESIGN?

As with exterior and interior building materials, choosing green furnishings, fabrics and accents invariably means making trade-offs among performance, quality, beauty, durability and price. Yet, as awareness of energy and environmental issues continues to grow, most responsible home furnishings manufacturers are now striving to create products, refine manufacturing processes and develop business practices in ways that are as eco-friendly as possible. And their efforts are often yielding unanticipated benefits. Not only are these companies reducing their carbon footprints, they're often reducing costs and making their businesses and their communities more sustainable, too.

To help clarify and define just what sustainable design is for furnishings manufacturers, retailers and consumers alike, two organizations have recently developed guidelines and certification programs specifically for the furniture industry. The Sustainable Furnishings Council, a nonprofit industry association founded in 2006, requires that its members minimize carbon emissions, waste-stream pollutants, unrecyclable content and primary materials from unsustainable sources for any product platform under its control. Its more than 250 members, which include manufacturers, retailers, environmental organizations and individuals, use its "life cycle assessment" approach to analyze the environmental impact of their products and establish what is known as a verifiable "chain of custody," which tracks the flow of wood products from their source to their final user and end-product. Known for its rigorous compliance with established sustainability standards, the organization launched a public advertising and in-store tagging program in 2008, which enables consumers to identify retailers and products that meet or exceed its sustainability standards.

The other organization that has defined industry-specific environmental guidelines for furniture is the American Home Furnishings Alliance. Launched in 1999, its voluntary Enhancing Furniture's Environmental Culture (EFEC) system supports registered companies in analyzing the environmental impact of their processes, raw materials and finished products



Previous page: Old chairs get new life with fresh upholstery and slipcovers. Opposite: A pair of Marcel Breuer Wassily chairs brings timeless style to

a room by architect Rick Renner. Above: Old furnishings mixing with new brings eco-friendly sophistication to a room by designer Janie Hirsch.

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.

WOOD FURNISHINGS AND CASE GOODS

Wood and Construction

Wood furnishings range from affordable machine-made ready-to-assemble (RTA) pieces to costly handmade pieces crafted with age-old woodworking techniques. Lower- and mid-priced wood furniture is made of a wood veneer or a paper laminate attached to a core of particleboard or plywood. Higher-end pieces are made of solid wood. The woods used to make the furniture may come from domestic forests of rapidly growing or abundant species, such as pine, basswood, beech wood or maple, or slow-growing or rare trees, such as chestnut,

mahogany or oak. They may also come from exotic forests in such places as Asia, Africa or Brazil, and might include species such as teak or zebrawood. Some furnishings made from bamboo and rattan can be combined with and look like wood, but bamboo is actually a grass and rattan is a vine.

The greenest options for wood furnishings are those made from solid, abundant woods grown and harvested from certified sustainably managed domestic forests, as the energy expended in transporting the woods to the manufacturing facility will be low. However, for those who prefer the look of furnishings made from exotic woods, choosing pieces that



A Word on Finishes

Since cabinetry occupies so much surface area in a kitchen, making smart choices about it also affords a great opportunity to reduce your carbon footprint. If you plan to purchase new wood cabinets, be sure their finish is eco-friendly, too. A new urethane-based finish is formulated without harmful chemicals, so once the solvents have evaporated, there are no noxious off-gases emanating from the coating. The low-VOC finish cures well before the two-week standard time frame set forth by the Kitchen Cabinet Manufacturers Association's (KCMA) performance requirements. And it is HAPs-, formaldehyde- and nitrocellulose-free. Christiana is one company that uses this finish on its cabinets. For other companies who meet the KCMA's green requirements, see greencabinetsource.org.

formaldehyde from evaporating from the pressed wood. But if the melamine doesn't cover the entire surface or small holes are drilled along the edges, evaporation can still occur. Furthermore, cabinets can be treated with harmful solvent-based stains and finishes, which also contribute to the degradation of indoor air quality.

GREEN CHOICES

Because the materials and finishes and ways in which they are constructed are so variable, and because they can be standard or custom, and range from relatively inexpensive to extremely costly, the greenest choice you can make for cabinets will invariably involve a trade-off in one way or another. Consider the following eco-friendly options.

- **Recycle or revamp existing cabinets** The eco-friendliest choice you can make is to continue using your existing cabinets. If you've got wood cabinets with a worn finish, you can give them a lift by refinishing them with a low- or no-VOC paint. If you're handy, you can do this yourself, though it requires a fair amount of elbow grease. Cabinet repair companies can also reface wood veneer or laminate cabinets. If the layout of your kitchen works for you, you can

Opposite: Architect Rick Renner's kitchen features counters made from recycled paper, bamboo cabinets, and cabinet pulls crafted from the building's old metal window sashes.

In the living space beyond, low-VOC paint covers the walls, and floors are sustainably harvested Maine birch. Right: Reclaimed wood floors and beams add warmth to a new kitchen.

also upgrade cabinets by replacing just the doors. Another way to minimize impact on the environment is to look for salvaged cabinets or make cabinets out of reclaimed wood, though these choices will limit your aesthetic control.

- **Choose sustainably forested wood or wood-byproduct cabinets** According to the National Kitchen & Bath Association, wood is the number-one choice for cabinets in this country. If you opt for solid wood cabinets or cabinets with wood veneers, choose those made with woods certified by the Forest Stewardship Council or SFI, Inc., which are respected third-party organizations that evaluate wood products manufacturers for their forestry and environmentally safe manufacturing practices. Also look for cabinets made from FSC-certified particleboard or Medite II, a formaldehyde-free recycled wood fiber product made by SierraPine, rather than conventional MDF Marine-grade plywood and plywood made with soy-based adhesive are other eco-friendly options, as is a product called Allowood,





Top: This bath is clad in an engineered quartz tile and the countertop is CaesarStone.

Above: White subway tile and marble counters contribute to the clean quality of this inviting kitchen.

SOLID SURFACES

Pros Made by such companies as Avonite, DuPont (Corian), and Swanstone, nonporous solid-surface countertops are custom-made to your specifications and come in a rainbow of colors and patterns. They're seamless, stain-resistant, and scratches can be sanded out.

Cons These surfaces are vulnerable to hot pans, which can damage them. They can range from moderately expensive to more expensive than granite or marble. They're made from synthetic acrylics or polyesters.

Eco-Notes These products are durable.

CERAMIC TILE

Pros Ceramic tile is often inexpensive, durable and easy to clean. Because it's installed a section at a time, it can also be installed by a resourceful do-it-yourselfer. It is heatproof, stain- and water-resistant, and comes in a wide range of prices, colors, textures and designs.

Cons Tiles can easily chip or crack, grout lines become stained and custom-designed tiles are very expensive. Also, they result in countertops that aren't completely smooth and that can be uneven.

Eco-Notes Be sure to use nontoxic grouts and adhesives. Tile is generally inert and biodegradable, but some tiles are finished with glazes that contain elements that can be harmful to human health.

LAMINATES

Pros Made of paper raw materials, laminates are low-cost and have smooth surfaces that are easy to clean. They are also available in a wide range of colors and are inexpensive. (Brands include Formica, Nevamar and Wilsonart.)

Cons Scratches and chips are almost impossible to repair and seams show. Laminates also are finished with petrochemical-based resin.

Eco-Notes Resins used may include urea-formaldehyde. Look for laminates that advertise that formaldehyde is not used in their production. Adhesives used to bind the product to a particleboard surface can be toxic. Particleboard, interior-grade plywood and MDF substrates can outgas formaldehyde, unless FSC-certified. If you choose a laminate, get one that is Greenguard-certified.

MATTRESSES AND BEDDING

The quality of your mattress will profoundly impact the quality of your sleep. But given the number of synthetic materials and chemicals used in the manufacture of most mattresses, it can also have a profound effect on your health. With so many different manufacturers and mattress products in the marketplace, weighing the options in comfort, cost and durability is difficult enough. But from a green perspective, it is also important to assess the chemicals that mattresses may emit and the effects they may have on our health.

Mattress manufacturers often appeal to consumers with promises of the best sleeping comfort, without mentioning the impact that a mattress's materials may have on the air they breathe. Yet many commercial mattresses are manufactured using polyurethane foam, synthetic fabrics, chemical fire retardants, toxic dyes, formaldehyde, antifungicides, pesticide-treated cotton and stain-resistant chemicals, and the potentially toxic VOCs outgassed from these elements can cause allergic reactions and other health problems.

