

MIDWEST LIVING® 2010 IDEA HOME

Natural

STYLE

What's smarter than great design that cuts your energy costs and helps the environment? When the Chicago Museum of Science and Industry invited us to redesign the interior of their award-winning *Smart Home*, we made real-world, responsible choices that can make *your* house look great and run more efficiently, too.



◀ Look for these circles throughout the story. They call out some of the recycled, organic and energy-saving materials that we selected for use in the *Smart Home* (right).

Architect Michelle Kaufmann thinks our houses have a lot of catching up to do. “While we have the most up-to-date flat-panel TVs, computers, and cell phones and technology that seems to change daily, the basic way most homes are built hasn’t changed much in more than 170 years,” says Michelle, the designer chosen by the Chicago Museum of Science and Industry to work on its *Smart Home*. In 1933, on the *Smart Home* site, the Century of Progress World’s Fair had an exhibit titled “Homes of Tomorrow” featuring precursors to today’s prefabricated houses and solar heating. Have we really moved so slowly in the past 77 years? The museum conceived its 2,100-square-foot *Smart Home* as an ever-evolving exhibit to teach us all how to move a little faster.

The museum’s vision for the home included fitting it onto a narrow Chicago lot and using modular construction to demonstrate the newest and best environmental practices and products. In the past two years, more than 250,000 visitors have toured “Chicago’s greenest home” to learn about its innovations for living responsibly and safeguarding the environment (see “A Very Smart Home,” page 75, for details).

This year, the museum invited *Midwest Living* to update the home’s interior design. We eagerly took on the project with the goals of highlighting our fragile environment and giving you practical ideas for preserving natural resources when you’re decorating, remodeling or building a home.





LIVING ROOM

The Earth inspired our redesign. Objects, images, forms, textures, materials and colors that relate to nature formed our design plan.

PAINT We selected our color palette from Natura, a new zero-VOC (causing no indoor air pollution or fumes) paint available in thousands of hues from Benjamin Moore. Colors on the main level replicate earthy browns, mineral grays and stone neutrals. Upstairs, we selected

hues that echo the greens of treetops and blues of the sky seen from the windows.

FURNISHINGS We used low-impact furniture from Lee Industries constructed with frames of FSC- and SFI-certified wood (sustainably harvested timber), recycled steel springs, soy-base cushions and organic or natural fabrics.

ACCESSORIES Tall wall art in the living room represents life-size images of threatened

Midwest prairie species. A plush area rug made of 100-percent felted wool adds texture. In the foyer (left), photos show the beauty of fall leaves. A series of similar nature prints are in most rooms.

FIREPLACE Portable and ventless, this efficient unit runs on denatured alcohol instead of gas.

▲ A Chicago artist built a stylish modern coffee table using wood from a centuries-old burr oak that fell on the museum grounds during a storm.

► A floor lamp fashioned from driftwood uses a GE Sunshine CFL (compact fluorescent lightbulb) that uses 75 percent less energy than an incandescent.

◀ Recycled scraps of cotton create a spaghetti look on this shaggy accent pillow.





◀ Wood salvaged from old tear-downs was turned into the modern table/bench (above) and finished with non-toxic water- and soy-base finishes.

DINING ROOM

A vaulted ceiling crowns the airy main-level dining area and open stairway (right and below). Thanks to skylights and 12-foot-wide accordion-glass deck doors, sun and breezes help heat and cool this area.

LIGHTING Sculptural chandeliers handcrafted from hickory branches and twigs and painted with low-VOC paints are the dramatic equal of any crystal or brass version. They harmonize nicely with the other natural

colors and elements in this space.

FLOORING The stone floor offers durability, plus it contributes to a healthful indoor environment because it cleans easily and doesn't harbor mold, dirt or allergens, unlike wall-to-wall carpeting.

ACCENTS We chose to focus on the Earth's beauty by accessorizing with natural objects such as a large driftwood bowl, salvaged twisted tree roots, sparkling rock geodes and sculptural willow branches.

Reuse/Reclaim

Before buying new, consider giving a second life to existing materials, such as vintage furniture, salvaged building materials or wood from downed trees.





► Concrete (made from natural sand, gravel and water) pairs with more wood from the downed tree to form a unique and beautiful tabletop.



A very smart home

Michelle Kaufmann, the Smart Home architect, demonstrates sustainability and environmental consciousness when designing homes. Here are eight guidelines utilized in the Smart Home:

CONSTRUCTION SAVINGS The house was built as modules in a factory and assembled on the museum grounds. Building in a controlled indoor environment reduces wasted materials and speeds construction because weather isn't an issue. That translates into saved energy and resources.

NATURAL ENERGY A green roof covered in plants helps cool in summer, retain heat in winter, absorb rainwater and—working in conjunction with permeable pavers on the driveway and paths—minimize runoff. A rooftop set of photovoltaic (PV) film panels and a wind turbine on the property harness the sun and Chicago's famous wind to generate much of the home's electricity.

WATER SENSE Low-flow showerheads and dual-flush toilets conserve water. Collected rainwater and gray water (rinse water from the clothes washer, sinks and showers) are used to water landscaping and flush toilets.

WINDOWS/DOORS/SKYLIGHTS Strategically placed, energy-efficient versions add natural lighting and ventilation, minimizing the need for artificial light or air-conditioning. Dual-panel, low-E glass reduces leaking of heated or cooled air by 10–25 percent. Motorized, insulated window shades offer additional heat and light control.

LIGHTING For limited light sources in the home, LEDs (in our ceiling cans) last up to 50,000 hours. More common-use CFLs last 10,000 hours (in our lamps and pendants), handily beating incandescents (1,200 hours).

HEATING/COOLING A high-velocity air handler and system of narrow insulated ducts mean air flows from vents faster, which decreases time to heat and cool rooms.

INSULATION A spray-in formula reduces energy consumption by up to 50 percent compared to roll-in insulation.

EXTERIOR SIDING Long lasting FSC-certified ipe wood and integral-color cement board panels require minimal maintenance. The wood weathers, and color is infused in the cement.



KITCHEN

This open space (left and below) efficiently serves the daily needs of two empty nesters, as well as social gatherings of friends and family.

CABINETS Oak veneer, placed horizontally and stained espresso brown, covers the cabinets' particleboard substrate for a contemporary look. The wood is FSC-certified, the sealant uses no VOCs, and the particleboard is formaldehyde-free.

COUNTERTOPS Manufactured in Chicago

from locally recycled glass, these counters attractively reuse discarded materials. Buying locally made products saves a bundle on transportation energy costs. We picked a color that mimics the stone floor for visual continuity.

APPLIANCES We chose Bosch appliances, a partner with the U.S. Department of Energy for two years. The cooktop uses a magnetic process to create heat in a pan (rather than from a source under the pan), using less energy and

immediately cooling when turned off. The oven's speed convection cuts cooking time by 30 percent. The refrigerator offers energy and vacation modes for conservation. The dishwasher rates as the quietest and most energy-efficient model on the market.

LIGHTING Windows along the backsplash offer natural task lighting on most days, reducing undercounter lighting usage. The island pendants use GE Energy Smart Cool White CFLs.



This jointed Karbon faucet (below) from Kohler not only has the flexibility of a gymnast, but its aerator saves water.



▲ The side chair's tonal gray weather-resistant resin weave is 100 percent recyclable.

► The kitchen counter uses 85 percent recycled material, mostly repurposed glass discarded in Chicago.

▼ Cut twig pieces line the outside of a pedestal bowl on the rolling cart.



LOUNGE

This informal entertainment area (above) adjoins the kitchen. A 12-foot expanse of glass doors opens to a patio between house and garage. When the doors are open, cross breezes cool the space.

TV/ENERGY

MONITOR Our Energy Star-compliant flat-screen TV is equipped with a real-time, whole-house energy tracker that identifies high or low usage periods of heat and electricity, offering an opportunity to control costs. It also tracks energy (stored and used) supplied by the solar roof panels and wind turbine.

SEATING Chairs instead of a sofa offer flexibility for entertaining guests or just watching TV. Under

the TV, a built-in bench with storage is made of the same materials as the kitchen cabinets. Pillows of silk, linen, cotton and Mongolian lambskin offer natural style and comfort. A rolling cart (made of sustainably harvested oak with no paints or solvents used in the finish) works to store overflow from the kitchen and easily rolls onto the patio for outdoor parties.

ACCESSORIES We chose recycled glassware, bamboo plates and trays, and natural woven baskets for utility. Additional decorative details include a woven sisal rug, collected stones in glass vases and a papier-mâché "plant" made from recycled cement bags.

Energy Star products matter

In 2009, they saved Americans nearly \$17 billion on their utility bills.





MASTER BEDROOM

Clutter-free, this simple retreat offers a calming and organic ambience with soft green walls that match the treetops seen out the windows.

BED The large burr oak tree that fell on the museum's grounds provided wood for the custom, free-flowing wall-hung headboard. The contemporary platform bed is made of bamboo (renewable bamboo grows quickly—90 feet or more in one year) and is paired with a natural rubber latex mattress.

ACCESSORIES Our organic cotton sheets are a sustainable textile certified by the Global Organic Textile Standard (GOTS). Brown accent pillows are an organic cotton knit. Organically grown sustainable materials, such as cotton or wool (as opposed to manufactured fabrics), are gentler on the planet. Driftwood pieces were configured into a side table. Square 18-inch carpet tiles of 100 percent renewable wool, which has not been dyed or treated, form a soft, custom-size bedside rug.



▲ Our bed coverlet is pure silk with cotton fill.

◀ The master bath's custom sinks are made of concrete and an aggregate of recycled toilet porcelain.

MASTER BATHROOM

Designed for two, the main bath offers individual sinks and vanity mirrors, a handy ledge and a walk-in shower (not seen).

WATER SAVINGS

A dual-flush toilet from Kohler has a two-button actuator that offers .8- or 1.6-gallon options, saving as much as 25,000 gallons of water per year over traditional toilets. The low-flow

showerhead cuts water consumption by 30 percent.

MATERIALS The shower's glass tiles are made from recycled wine bottles and automobile windshields. The marble floor tiles were salvaged from the Chicago Wrigley Building renovation done in the early '90s. Look for great reusable finds like this at architectural salvage sites. Real dried magnolia leaves decorate the wallpaper.



Conserve water Just turning off the water when you brush your teeth saves around 4 gallons per person, every time.



PLAYROOM

Designed for grandkids, this play space (left) uses endangered/protected species (polar bears and seal pups) on wall murals to bring attention to global warming.

FURNISHINGS The project table, made from formaldehyde-free FSC-certified birch finished with nontoxic paint, offers a safe environment for creative play. A mock tree "trunk" lamp is made from papier-mâché and painted with low-VOC paints. A GE Cool White CFL bulb enhances the room's blues and grays.



▲ Playroom furniture uses sustainable bamboo and eco-friendly nontoxic paint.

► The Rainforest Alliance certified this desktop, which is made from 100 percent post-consumer recycled standard office paper.

▼ Rolled newspapers form this handy storage container that tucks under the desk.

HOME OFFICE

Outfitted for a small home business, this environmentally friendly second-floor bedroom includes a roomy balcony overlooking the garage's green roof garden.

FURNISHINGS A corner desk (right) has a steel base (a recyclable material) and a desktop made from recycled office paper. It offers workspace and flexibility when paired with two rolling file cabinets made in North Dakota using local sustainable materials. The desk chair uses components safe to human and environmental health, and it disassembles in five minutes with common tools for easy recycling. Storage baskets made

from eco-friendly water hyacinth and recycled chipboard are a green alternative.

A good way to recycle is to reuse antique furniture or remake less-than-perfect finds from local resale and antique shops and incorporate them into your decor. A vintage metal barrister's cabinet provides storage for books, files and more. A cotton-covered bulletin board helps keep things organized.

TECHNOLOGY Our state-of-the-art computer and all-in-one Energy Star printer/fax unit connect to a Smart Tower power source that automatically powers down outlets when not in use, reducing standby power by up to 85 percent.

Recycle The recycling of one aluminum can saves enough energy to power a TV for three hours; one glass bottle powers a lightbulb for four.



◀ Native plants, like this *Heuchera*, require less care than nonnatives.

▼ Reservoirs in Lechuza self-irrigating planters monitor watering needs, aiding conservation.

OUTDOOR SPACES

From the ground up, the Smart Home's landscape has an eco-friendly focus.

WATER CONTROL

Permeable pavement, rain gardens and bioswales (shallow depressions in the

ground) ease run-off into surrounding streams and lakes and enable slow, healthy water absorption by the soil.

RAIN GATHERING

Barrels collect rainwater to irrigate plants, reducing the need to use drinking water.

COMPOSTING Kitchen and yard waste becomes compost that goes into the garden as a rich soil conditioner. As a mulch and fertilizer, it minimizes weeds, reduces soil temperature fluctuations, protects roots and keeps vegetables clean.

NATIVE PLANTS

Prairie, dune and oak savannah plantings recall our region's past, and require little upkeep.



MAXIMIZING SPACE

A few smart ways to get more green in a small space: trellises, caged and staked tomatoes, container gardens, raised

beds (a good choice when urban soil is contaminated) and vertical planters (above). **FLOWERS** We chose a variety of Proven Winners plants, such as lobelia, Supertunia and

Heuchera, for their Midwest hardiness.

OUTDOOR FURNITURE

Teak pieces from Gloster (above) are weather-resistant and made from wood grown on managed plantations. A sectional from Crate & Barrel (above left) on the deck off the dining area is made of recyclable resin wicker.

GARAGE DOORS

A single see-thru garage door that opens to the patio and kitchen end of the house allows expansion of the outdoor space for entertaining. This door and the main driveway door (with frosted glass panels) are made by Clopay. Both have insulated tempered glass and an attractive contemporary aesthetic.

Landscaping is eco-smart One mature tree eliminates the emissions of 13 vehicles.



PROJECT TEAM

EXHIBIT Museum of Science and Industry Chicago, 57th Street & Lake Shore Drive, Chicago, IL 60637 (773/684-1414; msichicago.org). Daily tours given through January 9, 2011. Check website for times, tickets and details.

ARCHITECT Michelle Kaufmann (michellekaufmann.com).

BUILDER All American Homes (800/573-2727; allamericanhomes.com).

INTERIOR DESIGN Carol Schalla, Senior Home and Projects Editor, *Midwest Living*.

LANDSCAPE Jacobs/Ryan Associates (jacobsryan.com) and University of Illinois Extension (urbanext.uiuc.edu).

SPONSORS

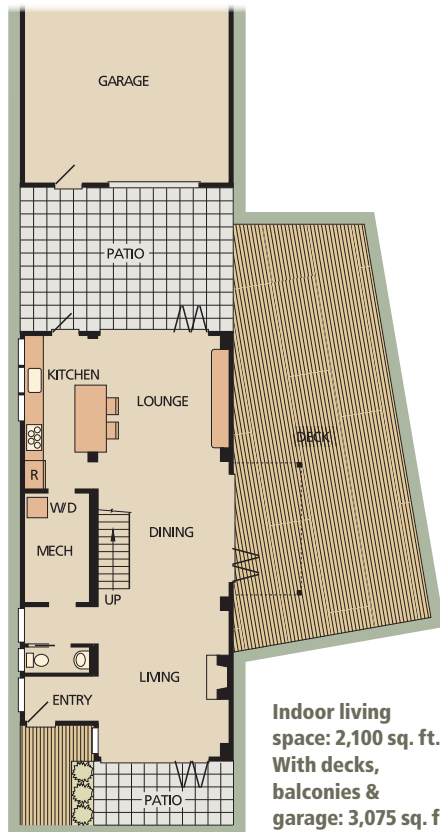
BOSCH/BSH HOME APPLIANCES (800/944-2904; bosch-home.com/us).

CLOPAY (800/225-6729; clopay.com).

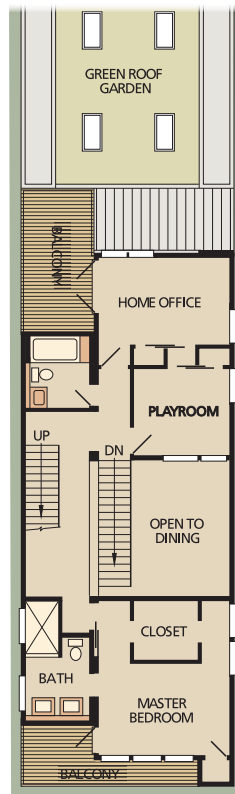
GE LIGHTING (800/435-4448; gelighting.com).

LECHUZA (877/532-4892; lechuza.com).

PROVEN WINNERS (877/865-5818; provenwinners.com).



First floor



Second floor



Bosch/BSH Home Appliances

EcoSmart technology in their washers and dryers is an intelligent network of sensors that works to monitor and reduce energy and water usage. For the second year in a row, Bosch/BSH has been named Energy Star Partner of the Year by the U.S. Department of Energy for not only meeting, but exceeding government guidelines on all of their appliances.



Clopay

We chose two contemporary garage doors from the Avante Collection. These aluminum-and-glass doors fit the streamlined modular architecture of the home, and one acts as a versatile patio door to seamlessly merge the garage and outdoor living spaces. Made with weather-tight construction, and using 7/16-inch-thick insulating glass, they increase energy efficiency.



GE Lighting

General Electric invented the world's first incandescent lightbulb. Now GE's Energy Smart CFL bulbs work much more efficiently and have less environmental impact. If every household in the U.S. replaced one lightbulb with a CFL, we'd save enough energy to light 3 million homes for a year and prevent greenhouse gases equal to emissions of more than 800,000 cars.



Lechuza

We chose Cubico Cottage planters for their stylishly modern look, but it's the patented irrigation system of these outdoor planters that we love. They're like personal plant sitters, rationing water just like in nature. As a result, the plant's roots won't rot in standing water. Excess rainwater easily drains, leaving behind a full reservoir that keeps plants well-watered.



Proven Winners

A rigorous plant selection process assures that every Proven Winner plant is high-performing and unsurpassed in flowering, growth habit, disease resistance and regional performance. Plants in the *Smart Home* garden include hardy varieties of lobelia, *Nemesia*, *Supertunia*, verbena, *Heuchera*, hydrangea, *Calibrachoa*, coleus, *Euphorbia*, *Lobularia* and many more.