

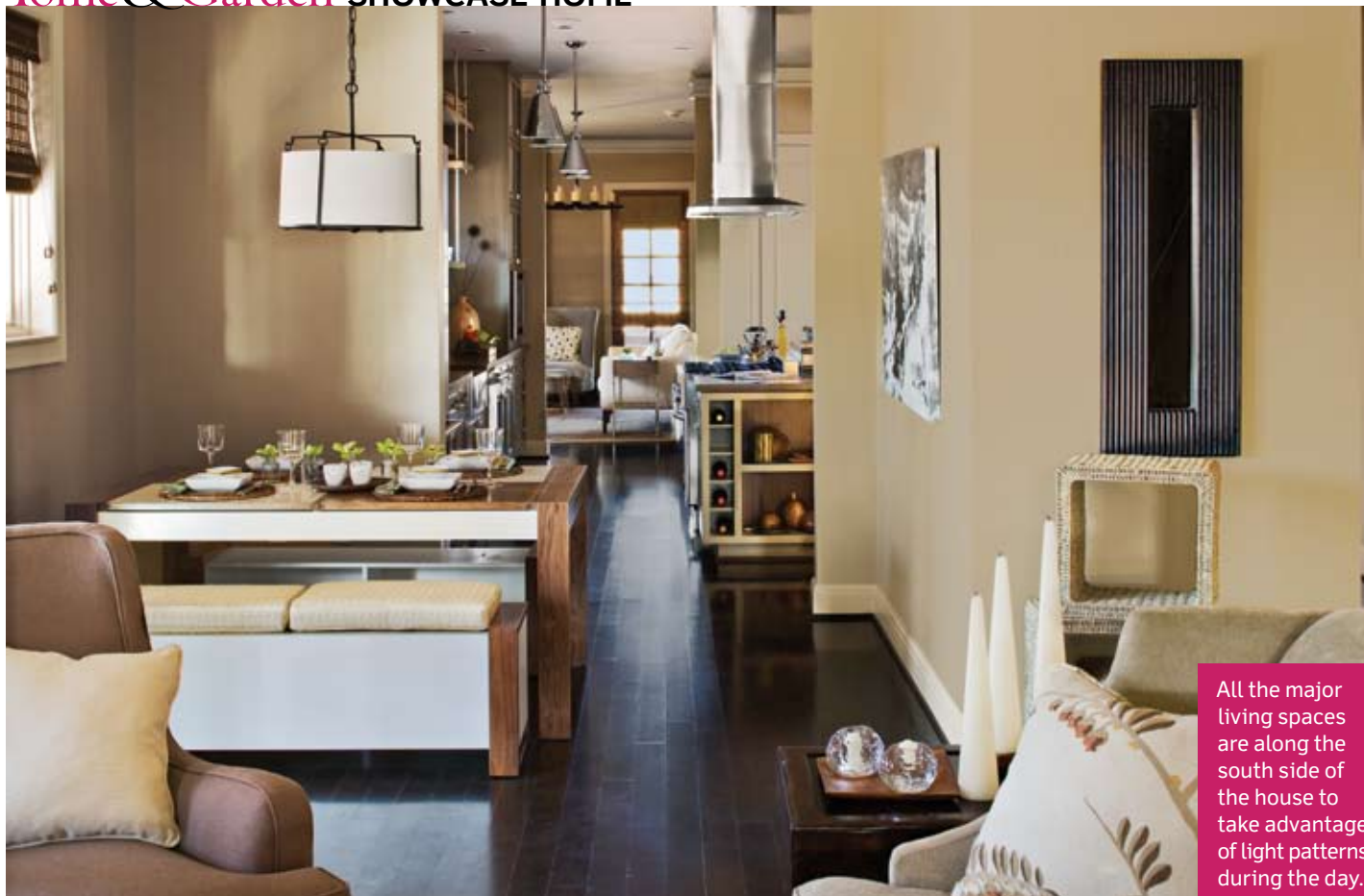
Home & Garden

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southernliving.com/green

Our Most Innovative House Ever

Now is the time to get comfortable with environmentally friendly design. Tour our South Carolina showcase home to find ideas that will work for you. By **Derick Belden**, photography **Laurey W. Glenn**, styling **Scott Martin**

John Wicks, a student at Furman, and Michael McDunn crafted the mantel from a tree on campus that had to be cut down.



All the major living spaces are along the south side of the house to take advantage of light patterns during the day.



The Cliffs Cottage, our showcase home on the campus of Furman University in Greenville, South Carolina, is a project that began more than seven years ago. But it wasn't until 2006 when Furman shared their long-term commitment to the environment and sustainability that we recognized a tremendous opportunity to learn firsthand about building better houses. For the next year, we're going to use this home to look at Green topics and give you real-life advice.

Getting Started The home's design was important to the overall mission. We had to be sensitive to how this affected material needs, the home's position on the lot, and how the house fit onto the Furman campus. And, for our readers, we wanted to ensure the home was comfortable and traditionally styled with contemporary details and that every product was readily available.

Furman recruited architect Scott Johnston of Johnston Design Group and landscape architect Mark Byington of Innocenti and Webel to meet these goals. Scott's practice

in Greenville is centered on Green design. Innocenti and Webel created the master plan for the "new" Furman campus 50 years ago, and the firm continues to provide landscape planning for the university. Both team members understood how to tie this new project in to the existing campus.

Scott was inspired by stone bridges on campus and some of the Craftsman details on nearby student cottages. He was charged with designing a home that will eventually be transformed into Furman's Center for Sustainability. Mark's challenge was to incorporate a more casual house in to the formal garden spaces on campus; he used a natural slope to step the house down into a garden filled with native plants.

With plans taking shape, Linda McDougald and Adrienne Fulmer of Postcard from Paris began pulling together the interiors. With Green as the focus, evaluating which products were applicable made the interiors as challenging as getting the architecture correct. But, again, learning was part of the process. Furman enlisted Triangle Construction, with



Fred Lusk crafted shelves for the kitchen from lumber and stainless steel rods. They allow light in while providing storage.

William Trammell and Fred Lusk leading the charge, to meet the approaching deadline.

The Cliffs Cottage is intended to be the ultimate in Green design. We tried to use every product that filled the bill. Our goal is to give you tools to make your home more Green and sustainable. It all starts with education.

Energy Use The Cliffs Cottage looks at energy use in three ways.

1. Managing power use more efficiently.

Through a partnership with Charlotte-based Duke Energy, the house utilizes GridPoint technology to monitor energy. It's essentially a brain tied into the electric panel. The consumer *and* the power company can monitor circuits in the house to determine the most efficient use of power. For example, did you know that most electronics still draw power when they're off? With GridPoint, you can tell the computer to turn off those circuits when you're not at home.

YOU CAN: Plug your electronics into a power strip. Switch it off when you leave home.

2. Generating power. The site also integrates around 35kW of solar power. Panels on the south face of the garage generate 4 to 5kW, typical of a suburban home. Panels on garden structures and sculpture augment the rooftop array and offer ideas for other ways solar collectors can be added to an existing home. The power generated feeds into the GridPoint system, charging a battery for use during power outages. Because Duke Energy uses net metering, any excess power is sold back to the power company.

Solar energy is becoming more realistic every day. For our region, the most efficient use of this resource is for heating water. Tankless systems are gaining popularity, but The Cliffs Cottage has an alternative solution. With two small solar panels on the roof above the kitchen, the sun heats water before it hits the tank in the basement. That way, you're not using electricity to heat cool water; you only expend energy to heat water that falls below your preset temperature. This could mean free hot water most of the year.

YOU CAN: Use The Solar Estimator at www.findsolar.com to determine the

potential savings in your home made by installing a solar system.

3. Building a home that requires less energy. This should be a no-brainer, but you'd be surprised at the homes built today using less responsible products.

The Cliffs Cottage incorporates double-insulated windows and doors, Icynene insulation, and spider fiberglass insulation made from recycled material to create a draft-free home. By sealing the ductwork properly and balancing the system, Furman is not wasting energy to condition air in the basement or attic.

The interiors team selected appliances for their efficiency. For aesthetics, solid shades on decorative lighting hide compact fluorescent bulbs.

YOU CAN: Have your ductwork inspected and sealed if necessary. Balance your heating-and-cooling system. At up to a 40% energy savings by fixing an inefficient and leaking system, you'll easily offset the expense of the work.

Material Decisions Part of the process of designing and building a Green home is researching locally available materials and selecting those that reduce waste and help you build a better house.

Local is easy. In the case of The Cliffs Cottage, the stone on the exterior

BELOW: Tile laid in a herringbone pattern sets off one wall in the master bath. The fixtures from TOTO are all low-flow models. RIGHT: Adrienne designed a rug for the study inspired by details she found on the Furman campus. BELOW, RIGHT: Dark bamboo floors anchor the master bedroom. Sheer draperies soften the windows and organic textiles dress the bed.



was quarried from the nearby mountains. Cabinets came from neighboring Tennessee. They were shipped flat to save on transportation costs and were assembled on-site. By buying local, you can help reduce emissions *and* support your local economy.

The framing of this house is a combination of products from iLevel by Weyerhaeuser. Unlike conventional lumber, iLevel reduces waste by using more of the tree, keeping the builder from having to discard or pick through bad lumber. When the experts at iLevel estimated our plans, they came up with about 9% in material savings compared to using con-

ventional lumber. The benefit: a better built house and, with an anti-mold and mildew coating on the lumber, a healthier home. **YOU CAN:** Research, research, research. Put as much care into selecting the materials you can't see, such as lumber and insulation, as you do into those you can see, such as stone and cabinetry.

Decorative Decisions Linda and Adrienne also wanted to link the house back to the Furman campus. They took inspiration from an adjacent Japanese garden and mixed traditional furnishings with contemporary details. The furniture comes from a number of sources. Some pieces are antique or vintage—the original recycled product—and others are made from reclaimed wood, but the majority is from nearby North Carolina furniture companies committed to manufacturing in environmentally sensitive ways.

For flooring, they chose fast-growing yet durable bamboo and then selected a dark stain to keep the house from looking too contemporary. Selecting a prefinished floor helps keep smelly stains and sealers from being used inside. Adrienne and Linda used natural tile and tile with recycled content, and they chose locally formed concrete countertops for the kitchen.

YOU CAN: Look for furniture made with FSC- or SFI-certified lumber, soy-based cushions, organic fabrics, and recycled content. ●

Learn More

Because this project is about education, we offer two additional ways to get more information.

- **Come see us!** The Cliffs Cottage opens June 14 and will stay open through June 2009. Visit www.furmancliffscottage.com for directions and times, to schedule a guided tour, and to download an audio tour of the house. There's so much to learn from the house and surrounding gardens.
- **Visit www.furmancliffscottage.com.** We've developed a site dedicated to the house with links to every partner, interviews with our team, and even a real-time snapshot of power being used and generated by the house.





The Team

FURMAN UNIVERSITY: David Shi, Ed Marshall

www.furman.edu

JOHNSTON DESIGN GROUP:

Scott Johnston

www.johnstondesigngroup.com

INNOCENTI & WEBEL:

Mark Byington

www.innocenti-webel.com

TRIANGLE CONSTRUCTION:

William Trammell, Fred Lusk

www.triangleconstruction.com

POSTCARD FROM PARIS:

Linda McDougald, Adrienne Fulmer,

Moe Draz, Meredith Kinsey

www.postcardfromparis.com

STONER LANDSCAPING: Mike Stoner

MAJOR DONORS:

Cliffs Communities, www.cliffscommunities.com, and Duke Energy,

www.dukeenergy.com

Partners

APPLIANCES: BSH Home Appliances Group, www.bshg.com

Thermador, www.thermador.com

ART: Abstract's Gallery

The Collective Mark,

www.thecollectivemark.com

Trinity Behrends, www.trinitybehrends.com

Tyler Swolgaard

BATH FURNITURE: Grey Design Studio,

www.greydesignstudio.com

BRICK: Pine Hall Brick, www.pinehallbrick.com

BUILDING MATERIALS: Builders FirstSource,

www.blldr.com

CABINETS: Maple Hollow Holdings,

www.maplehollow.com

Florez Fine Woodworking, Inc.

CEDAR BEAMS: Harmony Exchange, www.harmonyexchange.com

CISTERN: Darco, www.darcoinc.com

COMMERCIAL INTERIORS: McMillan Smith &

Partners, www.mcmillansmith.com

CONCRETE: Ace/Avant Concrete Construction

Co., Inc., www.aceavant.com

CEMEX, www.cemex.com

COUNTERTOP: 3 Form, www.3-form.com

Star Granite Interiors,

www.stargraniteinteriors.com

Concrete Canvas, tobin@concretecanvas.net

DRAINAGE SOLUTIONS: Invisible Structures,

www.invisiblestructures.com

ELECTRICAL: Diversified Resources, Inc., www.diversifiedresourcesinc.com

ENGINEERING: Professional Engineering Associates,

www.peaofsc.com

EROSION CONTROL: Condor Environmental, LLC

FABRIC: Beacon Hill, www.beaconhilldesign.com

Design Tex, www.dtex.com

Fabricut and S. Harris, www.fabricut.com,

www.sharris.com

Kravet, www.kravet.com

Highland Court, www.highlandcourtfabrics.com

Robert Allen, www.robertallendesign.com

FANS: The Modern Fan Co., www.modernfan.com

FIRE ALARM: SimplexGrinnell, www.tycoint.com

FIREPLACE: Fire Rock Chimney Systems,

www.firerock.us

FIRE SPRINKLER: Reliable,

www.reliablesprinkler.com

FLOORING: RealStone Systems,

www.realstonesystems.com

To Market, www.tomkt.com

FOUNDATION WALLS: Superior Walls,

www.weaverprecast.com

FRAMING: GLW Management, Inc.

FRAMING MATERIALS: iLevel by Weyerhaeuser,

www.ilevel.com

FURNITURE: Brian Thomsen,

Thomsen Custom Finish

Century Furniture, www.centuryfurniture.com

ducduc, www.ducducnyc.com

Florez Fine Woodworking

Lee Industries, www.leeindustries.com

South Cone, www.southcone.com

GARDEN: Good Earth Organics

GEOTECHNICAL SUPPORT: Bunnell-Lammons

Engineering, www.blecorp.com

GEOTHERMAL SUPPORT: Hi-Tech Construction,

www.hi-techconstruction.com

HARDWARE: Rocky Mountain Hardware,

www.rockymountainhardware.com

HVAC: Akers Custom Comfort, Inc.,

www.ackvac.com

EarthSource Energy Solutions,

www.earthsource-energy.com

Jennings Dill, www.jennings-dill.com

Palmetto Air & Water Balance,

www.palmettoairbalance.com

YORK by Johnson Controls, www.york.com

INSULATION: Carolina Acoustical

Finley Insulators

Foam Worx Insulators,

www.foamworxinsulators.com

Insulate America, www.insulateamerica.com

Insulating Inc., www.insulatinginc.com

Johns Manville, www.jm.com

INTERIOR DOORS: Dealers Supply & Lumber

Company, www.dealersupplyandlumber.com

INTERIOR/EXTERIOR DOORS: Rogue Valley Door,

www.roguevalleydoor.com

LIGHTING: Circa Lighting, www.circalighting.com

Harrison Lighting, www.harrisonlighting.com

Visual Comfort and Co., www.circalighting.com

LOW VOLTAGE AND AV SYSTEM: Integral

Solutions Group, www.integralsg.com

LUMBER: Mountain Lumber Company,

www.mountainlumber.com

Weyerhaeuser, www.weyerhaeuser.com

MANTEL: John Wicks, Furman University

Michael McDunn

MATERIALS: Simpson Strong-Tie Deck

Resources, www.strongtie.com

MECHANICAL SUPPORT: Caviness Lambert

Engineering, www.cl-e.com

MULCH AND SOIL: Brown's Grading & Grinding,

Inc., www.brownsgrading.com

NATURAL SHADES: BayView Blind Co.

PAINT: Sherwin-Williams,

www.sherwinwilliams.com

Southern Painting, www.southernpainting.com

PAVING: Pave Tech, www.pavetech.com

PEWER COUNTERTOP AND APPLIANCES:

C.J. Navis

PLANTS: Beaver Creek Nursery,

www.beavercreeknursery.com

Park Seed Co., www.parkseed.com

PLUMBING: Eastern Industrial Supplies,

www.eisi-pvf.com

Gateway Supply, www.gatewaysupply.net

Hansgrohe, www.hansgrohe-usa.com

Kohler, www.kohler.com

TOTO, www.totousa.com

POWER MONITORING: Lucid Design Group,

www.lucidg.com

POWER SYSTEM: Gridpoint, www.gridpoint.com

PRINTING: LDI, www.ldireprinting.com

ROOFING AND LUMBER: Cox, www.coxwood.com

RUGS: Glen Eden Wool Carpet,

www.glen-eden.com

Natural Elements, www.natural-elements.net

SITE FENCING: Roberts Fence Co.

SITE SURVEY: Benchmark Surveying, Inc.

SITEWORK: Osteen Construction

SOLAR: Sunpower, www.sunpowercorp.com

Sunstore Solar Energy Solutions,

www.sunstoresolar.com

STEEL: CMC Steel Group, www.cmcs.com

STONEMASON: Jim MacFie

STUCCO: Upstate Stucco & Stone,

www.upstatestuccoandstone.com

SUPPORT: Bank of America,

www.bankofamerica.com

C. Dan Joyner, www.cdandjoyner.com

Carolina Foothills Garden Club

Chick-fil-A Cherrydale, www.cfcherrydale.com

Southeastern Paper Group

THERMOSTATS: Johnson Controls, www.jci.com

TILE: Campbell Tile Company,

www.campbelltile.com

Clayton Tile Distributing Company

Crossville, www.crossvilleinc.com

Fireclay Tile, www.fireclaytile.com

Sandhill Industries, www.sandhillind.com

Sonoma Tilemakers, www.sonomatilemakers.com

TRUSSES: MiTek, www.blldr.com

VENTILATION: Panasonic, www.panasonic.com

WALLCOVERINGS: Milliken, www.18owalls.com

WATER COOLER: Island Sky, www.islandsky.com

WATER FILTRATION: Everpure, www.everpure.com

WINDOWS: Andersen Windows,

www.andersencorp.com

WINDOW TREATMENTS AND ACCENTS:

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