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The Cliffs Cottage at Furman

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Even from a distance, The Cliffs Cottage at Furman doesn’t appear to be an ordinary home. And once you take a closer look at the Southern Living Showcase Home, you will quickly realize that there is nothing else quite like it.

The Cliffs Cottage at Furman, located near the Bell Tower at the former site of the lakeside tennis courts, is a model of environmentally responsible design, sustainable building techniques and materials, and energy-saving systems. From the bamboo flooring to the insulated windows to the solar panels in the roof, the 3,400-square-foot residential home features the latest innovations in sustainable living.

But the commitment to sustainability doesn’t end with the house itself. The same environmentally sound concepts have been applied to the landscaping, organic and formal gardens, rainwater collection systems, and even the driveway and walkways surrounding the home.

In short, Cliffs Cottage is a learning laboratory where the public can discover how to implement new, energy-efficient systems in their own homes. The house is expected to be among the first residential facilities in the nation to receive Leadership in Energy and Environmental Design (LEED) certification, considered by the United States Green Building Council to be the benchmark for design, construction and operation of high performance green buildings.
Furman president David Shi says, “We in higher education have a particular responsibility in this area since we educate those who will influence the future of our communities, our nation and our world. We have a responsibility to both model sustainable behavior within our institutions and to inspire our students to dream of and develop more sustainable ways of life.”

The home, which opened in June, will be featured in a series of stories in Southern Living magazine and will be open for public tours for the next year. Afterward it will become the Center for Sustainability at Furman, providing offices and meeting space for the university’s sustainability initiatives.

Joining Furman and Southern Living as principle partners in the project are The Cliffs Communities (seven planned residential communities located north of Greenville), Duke Energy, and Bank of America.

Scott Johnston of Johnston Design Group, LLC, designed the home, with landscape architecture by Innocenti & Webel LLC, a firm that has a rich history with Furman. Richard K. Webel designed the original master plan for the university 50 years ago.

Thanks to their efforts and those of many others, Cliffs Cottage offers:

- An assortment of features that reduce the need for cooling, heating and daytime artificial lighting. The home is situated along an east/west axis to maximize solar heat gain in the winter and minimize it in the summer. A long roof overhang on the south side shades the house in summer and allows the sun to heat the home in winter.

- An energy-efficient, precast foundation and two types of insulation to seal the home and preserve its thermal mass. The natural stone on the exterior absorbs heat that is slowly released after the sun goes down. Spray foam insulation, free of formaldehyde, seals off air leakage, moisture, airborne allergens and noise pollutants. Fiberglass insulation is environmentally sound, with a minimum certified recycled glass content of 25 percent. The pervious concrete and permeable pavers used in parking areas and main walkways allow stormwater to filter back into the soil instead of draining into streams and rivers.
A geothermal heating and cooling system, the most environmentally responsible and energy efficient system available. The direct exchange, ground source heat pump uses the earth’s constant underground temperatures to heat the home in winter and cool it in summer. Ground source heat pumps can reduce heating and cooling costs by as much as 50 percent and usually last three times longer than air source systems.

Two types of solar technologies — solar thermal for heating water and solar electric (photovoltaic) for generating electrical power. Heat from the sun is captured through two roof-mounted flat plate collectors, then transferred to an 80-gallon storage tank. The solar thermal technology can provide up to 80 percent of domestic hot water needs. Photovoltaic (PV) technology is the process through which sunlight is converted to electricity. Two PV modules on the garage roof power the entire house, and another pole-mounted PV tracks the sun as it moves east to west on one axis and north to south on another.

The solar features are tied together by GridPoint, a computer-operated battery system that stores additional power and maximizes energy use throughout the house. The solar technology will actually produce more power than the house needs; the additional electricity created will be funneled to Furman’s utility grid.

Furnishings that are environmentally sustainable and locally sourced, from the bamboo floors to the kitchen cabinets to tile made from recycled glass. Much of the furniture is constructed from reclaimed or sustainable-harvested wood or from trees removed for real estate development, and fabrics are made without toxic dyes. The bathrooms contain low flow showerheads and faucets.

Formal and organic gardens that surround the house feature native plants that are able to tolerate the region’s climate and soil conditions, plus ornamental plantings that are drought tolerant and easy to maintain. Landscape irrigation for the gardens is supplied by a 12,000-gallon cistern system that collects rainwater from the roof. The formal garden on the west side of the house (facing the lake) has been named for Furman’s First Lady, Susan Thomson Shi ’71.
The solar technology at the home, including solar thermal for heating water and solar electric (photovoltaic) for electricity, serves to demonstrate the variety of ways solar energy can be generated; walkways are built to filter rainwater and mitigate runoff; large underground cisterns collect rainwater for use in irrigating the grounds and gardens. This page: The main entrance to the 3,400-square-foot home; flooring is made of bamboo, a sustainable alternative because of its ability to replenish itself quickly.

Tour information and more

The Cliffs Cottage at Furman is open for public tours through June 14, 2009. Tickets are $10 for adults, $8 for senior citizens (62 and over) and $5 for children ages 6-11. Children 5 and under are admitted free. All children must be accompanied by an adult.

Tour hours are:
- 9 a.m. to 3 p.m. Tuesday, Wednesday and Friday.
- 9 a.m. to 7 p.m. Thursday; 9 a.m. to 4:30 p.m. Saturday.
- 10 a.m. to 4:30 p.m. Sunday.

The home is closed on Monday. Visit the Web site at www.furmanclifscottage.com for more information or to register for a tour.

Furman has also compiled an 80-page resource guide that offers in-depth articles on the home’s sustainability features and the key individuals and companies involved in its creation and execution. Written by Tina Tarkington Underwood, designed by Janice Antley and edited by Carol Anne Langley and Nancy Spitler, the guide is available by mail for $10 by calling the Office of Marketing and Public Relations at Furman, (864) 294-2185.
Corporate backing boosts university's sustainability efforts

Furman's commitment to sustainability and environmental stewardship has drawn the interest of a variety of regional and national corporations. Many have stepped up to support Cliffs Cottage or to assist the university in its sustainability initiatives.

One is Duke Energy, which has entered a partnership with Furman to create a demonstration laboratory on campus that will showcase the latest technological advances in energy efficiency and sustainability.

In conjunction with the construction of Cliffs Cottage, Duke Energy committed $1.5 million over five years to highlight the company's energy efficiency and sustainability initiatives. The immediate area around Cliffs Cottage is known as Duke Energy Village.

Ted Schultz, vice president of energy efficiency for Duke Energy, says that the company "has been able to build technologies into Cliffs Cottage that we believe will revolutionize the efficient use of energy in the future. The goal is to save our customers money through innovative energy efficiency programs and reduce our need to build future generation capacity."

David Mohler, the company's vice president and chief technology officer, expects the Furman-Duke Energy partnership to mature over the next five years. He says, "Our vision includes a Duke Energy Solar Energy Learning Center, where we will explore the role this renewable energy source might play in our future."

The Bank of America Charitable Foundation has made a $250,000 grant to Furman to support sustainability initiatives. The gift funds the Bank of America Fellows program, which will provide scholarship aid for students engaged in environmental projects on campus and in the Greenville community.

In addition to the fellowship program, the grant supports completion of Cliffs Cottage.

Beginning this fall and continuing over the next four years, Furman will bring one student to campus annually as a Bank of America Fellow. Each Fellow will receive a $25,000 scholarship over four years. Candidates must have a proven record of achievement in the environmental arena and bring a diverse background of environmentally related life experiences. The Fellows will
Many of the home’s furnishings are made from reclaimed or sustainable-harvested wood, and the fabrics have no toxic dyes. This page: The concrete countertops in the kitchen are highly durable, and ENERGY STAR appliances use substantially less energy than required by federal mandates; the long roof overhang helps shade the home in summer and allows the sun to heat the home in winter; locally sourced stone is yet another of the home’s sustainable features.

promote sustainable practices on campus, encourage student participation in environmental initiatives, collaborate with faculty on ecological research projects and be ambassadors for environmental action.

“The Bank of America Fellows program presents a unique opportunity to leverage Furman’s leadership position in speaking to our region’s environmental consciousness,” says Kim Wilkerson, Bank of America South Carolina president.

In a related area, the Waste Management Charitable Foundation has made a $10,000 gift to the university to support the restoration of the lake.

Furman unveiled plans in October 2006 to restore the lake’s environmental integrity and make it more attractive to visitors. In the past year the university has begun planting vegetation in the lake and on the surrounding border, naturalizing the streams that feed the lake and reducing the waterfowl population.

Beverly Surma, community relations manager for Waste Management, says, “Education and the environment are the company’s most important community priorities, and this project combines both of them in a novel way.”

To join Furman’s efforts to promote environmental stewardship or to learn about naming opportunities for Cliffs Cottage, contact Gary Hassen, director of major gifts, at (864) 294-3691 or e-mail gary.hassen@furman.edu.