

Catawba Center for Environment Embodies Sustainability

Catawba College took environmental stewardship to a new level when it constructed a green facility in 2000 to house its Center for the Environment.

The green design of the 21,000-square-foot building and the way it intersects with the community make it a model for the region and the state. The center used recycled and recyclable materials and sustainably grown wood in its construction.



It also installed an environmentally friendly ge-exchange system to heat and cool the facility.

Just as importantly, the structure is designed to encourage the integration of its program with environmental efforts in the region. For example, a geographic information system laboratory allows students to work on projects for the LandTrust for Central North Carolina, and a nature education room, modeled after nature centers across the state, gives students an opportunity to teach groups about the environment in a setting they will likely encounter when they graduate.

“We want our students to be participants in the conservation activities of this community and the region,” says Dr. John Wear Jr., director of the Center for the Environment.

“This building symbolizes the essence of our program. It is a laboratory in and of itself.”

Wear notes that he and Karen Alexander, the architect for the project interviewed people who

would use the facility before beginning the planning process. They team-taught a class in sustainable architecture that allowed students to research recycled and recyclable construction materials as well as eco-friendly technology. Finally, they solicited input from officials in organizations that work with the center in conservation efforts

“This facility is not just a building,” Wear says. “It embodies the spirit of the program.”

The \$5-million center overlooks the college’s 189-acre ecological preserve, where students conduct field research. Alexander positioned the building for the most efficient use of natural conditions. The building is oriented to capitalize on natural light, but large overhangs on the southeastern side reduce the heat from the sun in the summer. An existing bluff shields it from northern winds, and its placement on the site allows for minimal disturbance of the environment.

Some trees and shrubs were moved and reinstalled after the building was complete. Those trees that the contractor could not reinstall were chopped up on the site and used for mulch.

The building uses recycled materials. The carpet, for example, has a 100 percent recycled back, and some of the products that make up the outer fibers are also recycled. In addition, sections can be replaced without removing the entire carpet. “It is in the form of carpet tiles,” Alexander says, “so if a particular area of the carpet gets more use, then those tiles



can be rotated away from that area and new tiles can be installed.

The college used sustainably grown wood for the facility. “We used bamboo flooring because bamboo grows very rapidly,” Alexander says. “We did not cut down the rain forest to get our floor products.”

The contractor used efficient glass; paint, wall covering and stains that met criteria set by the Environmental Protection Agency; insulation made from recycled newspaper; ceiling tiles manufactured for noise reduction and light reflection; and an environmentally friendly ground-source heat pump, which has low carbon dioxide emissions and low overall environmental costs.

The heating and air conditioning system as well as light fixtures have occupancy sensors that automatically turn off the systems in a space if no one is present. Photo cells also control the artificial light.

“As natural light comes in, the artificial light goes down,” Alexander says.

The elevator in the building uses electric transaction, rather than hydraulic fluids, and is also energy efficient.

Photovoltaic cells capture solar energy, which is used in the building. In addition, the cells power an electric vehicle used in the ecological preserve.

The college committed to a construction waste management program for the project, which disposed of construction debris by sending it back



to the manufacturer for recycling or to recycling companies. The contractor, Wagoner Construction, used environmental science students to coordinate the recycling efforts.

“Catawba is taking the lead,” Alexander says. “It is showing how a small college can make a big statement about the importance of building carefully.”

Wear notes that the building epitomizes the mission of the Center for the Environment: to involve the college and its students in programs and activities that foster environmental stewardship.

“The college has made a substantial commitment to the environment with this facility,” Wear says. “This is a building that represents now and to future generations the commitment of Catawba College to the conservation and sustainable use of the earth’s resources.” ■

