

Case study

Furman University – Hipp Hall

Greenville, South Carolina



University builds energy efficient, environmentally friendly facility

Furman University is a private liberal arts university, nationally acclaimed for its academic excellence, engaged learning programs and campus beauty. Promoting sustainability in construction practices is just one facet of the university's strategic plan, which embraces innovation and improvement. When Furman decided to build Herman N. Hipp Hall, a new academic facility, it enlisted Johnson Controls help in pursuing a Leadership in Energy and Environmental Design (LEED®) certification. Achieving a "gold" rating, Hipp Hall is the first building in the state to receive this certification.

Since its founding in 1826, Furman has maintained a steadfast commitment to liberal learning and spiritual reflection. The university has adapted to dramatic changes in knowledge and society over the years by envisioning the future and responding strategically. Today, Furman serves approximately 2,600 undergraduate students on a 750-acre campus consisting of 36 buildings, the newest of which is Hipp Hall, a three-story, 30,000-square-foot facility that houses the departments of Education, Economics and Business Administration and an advanced technology center.

The new facility has enabled Furman to accommodate increased student enrollment and renovate older facilities with minimal disruption to the education process, according to Bill Howes, chairman of the Furman Board of Trustees. Used as an educational tool on campus, the LEED process itself met another goal of Furman's strategic plan by enriching the intellectual climate. "We made the decision to build Hipp Hall in an environmentally sensitive manner early in the planning process, after a core group of Furman administration and faculty brought the idea forward," states Howes.



"The challenge then, was to determine how to accomplish the project with limited funds and knowledge of the LEED certification process," says Howes. Johnson Controls, who had been providing the university with building management systems since 1996, invited key Furman personnel to its Bregel Technology Center at the corporate headquarters in Milwaukee, Wisconsin. "Johnson Controls support and demonstrated expertise here, was helpful in determining which LEED initiatives we could effectively pursue, and that were within our budget," states Howes.

Building according to plan

A goal of the university's strategic plan is to strengthen its commitment to the environment by promoting sustainability through educational programs, campus operations/construction practices and public awareness initiatives.

The Furman community is passionate about preserving the environment. So much so, that the Board of Trustees unanimously approved this goal as part of the university's strategic plan. "One of Furman's greatest assets is its stunning beauty," says Dr. David Shi, president of Furman. "It was only natural for us to make a commitment to environmental sustainability. Hipp Hall was the perfect opportunity for us to act on that commitment."

The university's objectives were to minimize the building's environmental footprint and to pursue the latest technologies in terms of energy

conservation and building operational efficiency. "With Johnson Controls help we were able to align the available LEED programs with the objectives of the Hipp Hall project," says Shi. Under the project, Johnson Controls expanded its scope of services beyond building management systems and fire alarm monitoring to also include LEED commissioning and documentation.

The Hipp Hall design focused on several LEED initiatives including building materials with recycled content, construction waste management, energy efficiency, indoor air quality, and occupant comfort and health.

"The building's features will save the university approximately \$15,000 per year in energy costs. This makes Hipp Hall the most energy efficient building on campus, by about 40 percent," states Jeff Redderson, director of facilities services. "We're now looking at greening the entire campus and using the LEED for Existing Buildings in the same way we used LEED for New Construction at Hipp Hall," adds Mary Pat Crozier, capital construction manager.

Enriching the intellectual climate

Another goal of Furman's strategic plan is to invigorate intellectual life at the university inside and outside the classroom. Furman employs an engaged learning approach – helping students assume greater responsibility for their education – which extends education beyond the classroom and promotes collaboration among students, faculty

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and the community. According to Shi, the LEED process itself was beneficial to this approach, serving as an educational tool for students, faculty and staff.

"By featuring the project in internal and external communications, we educated a broad audience on what we were trying to accomplish, how they can take part, and the impact it will have on Furman and the community. The recycling efforts alone were a wonderful tool for pointing out efforts being made campus-wide," says Shi. Academic and support personnel who would eventually be tenants of Hipp Hall became champions for the project. "We've had many outside groups visit and tour the building since completion. It's never difficult to get volunteers to make presentations," adds Shi.

According to Shi, the Greenville community has become more attentive to environmental issues. There is an increased emphasis on sustainable environmental practices. As a result, the efforts of Furman and other community organizations have become more visible. "The Hipp Hall project is a clear demonstration of the positive impacts of sustainability," says Shi. "We're committed to continuing our LEED initiatives as we move forward with the renovation of existing buildings. It's good for business and good for the environment."



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PRESIDENT OF FURMAN

Green facts about Hipp Hall

- 25% of construction materials contain recycled content
- 75% of construction waste was recycled
- Fly ash concrete foundation reduces amount of cement required
- Carbon dioxide monitors modulate outside airflow based upon building occupancy
- A radiant energy barrier improves performance of the roof and wall insulation
- Occupancy sensors switch off lights when rooms are not in use
- 90% of offices have direct line of sight to the outside
- External "down lighting" conserves energy, reduces light pollution
- Showers in lower level restrooms encourage alternative transportation
- Windows on south, east and west sides are equipped with (solar) green glass
- No oil based paint was used, reducing indoor air pollution

