Berea College Opens One of the World’s ‘Greenest’ Residence Halls

One of the world's 'greenest' residence halls has opened at Berea College, but energy reduction is only a part of what makes the Deep Green Residence Hall a deeper shade of green. Mule teams harvested wood from the college's forest, the college's Student Crafts program constructed furniture and students designed and crafted the building's iconic sundial patterned after a quilt pattern popular in Appalachia.

Berea, KY (PRWEB) August 26, 2013 -- Three years in the making, one of the world’s "greenest" residence hall, Berea College’s newly constructed "Deep Green" Residence Hall, is open to students for the 2013 fall term. Dubbed "Deep Green" until a permanent name is chosen, this 42,000 square foot, three-story facility with 66 rooms will house 120 students.

Deep Green is expected to achieve Leadership in Energy and Environmental Design (LEED) v2009 Platinum Certification by the U.S. Green Building Council and meet Petal Recognition under the Living Building Challenge 2.0 (LBC) by the International Living Future Institute. Pending these certifications, college officials expect this building to be recognized as one of the greenest in the world.

Oriented along an east-west axis to maximize sunlight into its interior and allow 114 photovoltaic panels to soak up as much direct sunlight as possible, Deep Green utilizes solar panel arrays, a geothermal heat pump system, high-efficiency windows, Energy Star rated appliances and low-flow plumbing fixtures. These energy-saving features earn all 19 points offered by the LEED Optimized Energy Performance Credits and result in 35% less energy usage than typical residence halls of the same size and savings of 55% in annual energy costs.

Energy usage intensity (EUI) is most often expressed in terms of annual energy used per square foot of building. Residence halls across the country, on average, measure an EUI of 90. Deep Green is designed to achieve an EUI of 32.

The construction methods, sustainability features and usage of local and recycled materials in construction of the residence hall fit within the college’s strategic direction to meet the American College & University President’s Climate Commitment goal of eliminating greenhouse gas emissions from campus operations and to promote sustainability to the campus, local community and region.

The first new residential facility constructed at Berea College since the Ecovillage a decade ago, this $16.5 million residence hall will be the third campus building to be awarded LEED certification, although nearly a dozen renovated buildings on campus meet LEED Silver certification. Lincoln Hall, the college’s administration building, earned a Silver certification in 2004 and historic Boone Tavern Hotel & Restaurant (owned by the college) was the first hotel in Kentucky to earn a LEED Gold certification in 2010.

The LEED certification denotes independent verification from the U.S. Green Building Council that a building is designed and constructed "using strategies aimed at achieving high performance in key areas of human and environmental health."

In determining a building’s certification, LEED measures performance in several sustainability categories, including energy and atmosphere (energy consumption and monitoring and the use of renewable energy sources), water efficiency, materials and resources, innovation in design, and awareness and education.
Albeit important, energy reduction is only a part of what makes this building a distinctive shade of deep green. Berea’s sustainability commitment stretches far beyond just managing energy efficiency and reducing its carbon footprint.

All wood in Deep Green, including 267 pieces of furniture made by Berea’s Student Crafts program, was harvested by mule teams in the 8,000 acre Berea College forest, a Forestry Stewardship Council certified forest. This harvesting method avoided the pollution of heavy machinery and long-distance transportation.

Located in the foothills of the Appalachian Mountains, Berea serves as a model for living more softly on the land by committing to construction projects that reduce energy consumption and preserve natural resources while protecting the health of buildings’ occupant.

The avoidance of harsh "red list" construction materials (including PVC), defined in the Living Building Challenge, helps ensure the health of those working and living in the building.

Student involvement in this project contributed to meeting the LBC’s certification for connectivity to the region and its surrounding. Students constructed the iconic ceramic sundial in a quilt pattern popular in the region, conducted an archeological dig at the construction site, crafted furniture for rooms and common spaces and created artwork featured in the building’s common areas.

The genesis of this building began three years ago when Berea recognized the need for more student housing to enhance residential life and exemplify the college’s mission to sustainability, or "plain living" as stated in the college’s Great Commitments.

The building was designed in a unique, collaborative architectural partnership between Hastings & Chivetta (lead designers) and Hellmuth + Bicknese (sustainability consultants), both based in St. Louis, Mo., with broad representation and input from members of the Berea College community. The building construction was managed by the Lexington, Ky., office of Cincinnati-based Messer Construction Co.

From concept to creation, Berea’s Deep Green Residence Hall demonstrates deep sustainability as one of the world’s greenest residence halls. By incorporating energy conserving features, employing environmentally friendly construction methods and materials, and reducing the college’s carbon footprint, Deep Green serves as a model for preserving the integrity of our environment and protecting the health of our people and our planet.

Deep Green Highlights:
- A 50 Kilowatt solar panel array installed on the south roof line produces 15% of the building’s annual energy usage.
- The buildings closed-loop geothermal system circulates earth-tempered water through 50 wells drilled 375 feet deep into the earth and throughout the building for heating and cooling needs.
- Increased insulation, a heat-reflective roof and high-efficiency windows help retain cool air during summer and heat during winter.
- Operable windows and ceiling fans in all occupied spaces allows the building to ventilate naturally when conditions are right.
- The use of natural day-lighting, Energy Star rated appliances, high-efficiency lighting and energy management controls are used throughout the building to further reduce electrical demand.
- Rain gardens with native vegetation and permeable pavements provide storm water protection.
• A building dashboard tracks energy consumption and makes occupants and visitors aware of the building’s ecological footprint.
• 100% recycled brick covers the building’s exterior and helps create a high-efficiency envelope.
• These components result in savings of 55% in annual energy costs and earn all 19 points offered by the LEED Optimized Energy Performance Credits.
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