



## The Greenest College Residence Hall in the World

Sustainable construction requires both foresight and the understanding that the considerably higher cost of green materials and carbon neutral processes will yield savings for years to come. The same can be said for an education. Investing in the future of one bright young individual benefits not only the student; the positive ripple effect may be felt for generations.

Berea is distinct because of a combination of factors: every student receives a tuition scholarship, every student works, and 97-99% of students have financial need. Each student receives the equivalent of a full-tuition scholarship worth \$22,100, or \$88,400 for four years. When Berea set out to build the greenest, most sustainable university residence hall in the world, they did so with an enlightened vision for the future. It was a bold undertaking for the 1600-student private liberal arts college in rural Kentucky, and they wanted the world to know about it.

Before breaking ground on the aptly named Deep Green Residence Hall, the office of Berea College Operations and Sustainability installed an OxBlue construction camera. The OxBlue camera delivers a live feed to a website that covers every aspect of the design, construction, and sustainability efforts of the project ([www.berea.edu/berea-live-green](http://www.berea.edu/berea-live-green)). The 8-megapixel camera captures 24/7 time-lapse photos of the construction site.

Being an entirely self-funded, non-profit organization, everything the college builds is funded by donors. As such, Berea leadership understands the importance of keeping donors, students, faculty and the community involved in large capital projects. Real-time construction camera feeds and time-lapse footage bring the excitement of the project to anyone with an Internet connection, regardless of whether they've set foot on the construction site.

"From a fundraising standpoint, we love to share student stories that show donors the impact of their dollars. The same holds true for construction projects," said Chris Maguire, associate vice president, Integrated Marketing & Communications for Berea. "In support of our direct mail campaigns, we set up special landing pages that allow donors and friends to see, up-close, stories of students and link to time-lapse videos showing a building going up. People get really excited about it. The video link drives home the bricks-and-mortar needs of the college campus and shows what donor and community support means to us."

### Sustainable aspects of the Deep Green Residence Hall are many:

- The project emphasizes using local and recycled materials and includes a 100% recycled brick exterior. Much of the furniture and trim will be fabricated by the college's Student Crafts Program with wood harvested from the nearby Berea College Forest, which is certified by the Forest Stewardship Council (FSC).
- Energy efficiency is improved through use of a well-insulated, high-performance building envelope; natural and assisted ventilation; task lighting/reliance on daylighting; special window glass (to protect against heat gain); high-efficiency appliances; a geothermal heat pump system to provide heating, cooling and hot water; and a building dashboard (available in the lobby and from any computer) that will track electricity consumption.
- Daylighting and natural ventilation schemes throughout the residence hall will keep residents comfortable year-round, and the building's orientation along an east-west axis optimizes the amount of sunlight available. Renewable energy systems on the south-facing roof include 114 photovoltaic (solar) panels, producing approximately 14 percent of the building's annual energy needs and reducing the building's ecological footprint.

## Greenest of the Green

Before Deep Green, Berea was already a nationally recognized leader in sustainability and green design practices.

"Sustainability is one of our great commitments. It is deeply rooted in our history and culture," said Richard Dodd, LEED AP, capital projects manager, Berea College Operations and Sustainability. "Being who we are and what we do – serving primarily underprivileged students from the Appalachian region – the concepts of sustainability and 'reuse, recycle and reduce' really resonate with everybody who comes here."

As a bonus for Dodd and his team, the OxBlue camera enhances project management by allowing subcontractors to monitor progress in real time.

"This eliminates the general contractor having to call up and say 'we're a week away from your start date.' Subcontractors are able to self-manage their start dates. That is worth the money to help the GCs out," Dodd explained.

Deep Green is slated to open in August 2013 and will provide housing for 123 residents. The building includes three floors and two wings across 42,000 square feet of space for living, study and common areas.

The Deep Green Residence Hall is on target to achieve LEED Platinum certification and Petal Recognition under the Living Building Challenge (<http://living-future.org/lbc>). The Living Building Challenge – which Dodd describes as "LEED on steroids" – is a green building certification program that defines the most advanced measure of sustainability in the built environment possible today. Deep Green was designed to meet the stringent standards the Challenge sets for site, health, equity, and beauty as well as the strict requirements for materials, processes and sourcing:

- Red List: The project cannot contain any Red List materials such as polyvinyl chloride (PVC) or hydrochlorofluorocarbons (HCFCs).
- Embodied Carbon Footprint: The project must make a carbon offset to account for the total footprint of embodied carbon from the project's construction.



- Responsible Industry: All wood in the project must be certified by the Forest Stewardship Council (FSC), from salvage sources, or from the intentional harvest of onsite timber for the purpose of clearing the site.
- Appropriate Sourcing: The project must source its materials from varying distance radii in order to contribute to the expansion of a regional economy.
- Conservation + Reuse: The project must strive to eliminate or reduce waste during all phases of design and construction.

Projects that achieve Living Building Challenge standards can claim to be the "greenest" anywhere. Only four projects throughout the world have achieved Living Certification by meeting all imperatives of the Living Building Challenge.

**"Deep Green is such a unique and exciting project. I'm just really thankful that we have the camera there to document the construction. We show the time-lapse video at alumni reunions and board of trustees meetings. And we're planning to host a sustainability conference in the coming year; we will definitely be showing our time-lapse video to those audiences."**

Chris Maguire, Associate Vice President,  
Integrated Marketing & Communications for Berea

**About OxBlue:** OxBlue is a leading construction webcam service provider, with hardware, connectivity and expertise across 6 continents and all 50 states. OxBlue's time-lapse cameras connect people on and off site, by improving communication through high-resolution images and time-lapse videos.



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