



**Stonehill College**  
**Easton, Massachusetts**  
**Science Center Green Roof Project**

## **SCHOOL**

Stonehill College is a highly selective, nationally ranked, four-year Liberal Arts College comprised of approximately 2,350 undergraduate students located on 384 acres of land in Easton, Massachusetts.

## **ABSTRACT**

During the design process for the new Science Center at Stonehill College, staff, students, faculty and architects initially focused on sustainable initiatives such as lighting, high performance windows, and energy efficiency. But it became apparent that the two-story atrium space located on the south side of the new academic building, designed to be highly visible and greet visitors as they entered the College's main entrance, also offered a unique opportunity for another interactive sustainable feature: a **green roof**. To accomplish this goal, the initial design schemes included access to the roof from adjacent labs, and the structural design allowed for the additional load that would be required for a green roof. However, the green roof system was eliminated from the project during the conceptual design stage and it was not until well into the construction of the building that the idea of the green roof was successfully reintroduced, thanks to creative construction savings opportunities and hard work by the Stonehill College Building Committee.

Aesthetic and sustainable programmatic goals combined to dictate a hybrid between an **extensive vs. an intensive** green roof system; i.e. one that would provide the many sustainable benefits of green roofs while also meeting aesthetic expectations for multiple uses. A series of gently sloping mounds, separated by swaths of decorative stone, were designed to sweep across the roof, providing alternating areas of shallow and deep specialized planting medium to allow for tough sedum species in the shallow areas and deeper sections for clusters of grasses, perennials and small shrubs. The college community will assume a very active role in maintaining and monitoring the green roof, creating a truly interactive feature. The green roof is a highly visible aspect of this new prominent building and the accessible terrace allows not only for passive enjoyment of the green roof but also offers a promontory for viewing the adjacent landscape and Ames pond connecting the space to the larger campus as well as the beautiful main entrance. In addition, the green roof also provides substantial sustainable benefits. Stormwater runoff is slowed and captured from the roof and through the use of on-grade bioretention basins, mitigating the new building's environmental impacts on the sensitive water resource areas nearby. Furthermore, the vegetated roof reduces heating and cooling needs of the event space by creating thermal mass and evaporative cooling. Additionally, glare and heat is less than that which would have been generated by a conventional roof. Overall, the green roof creates a more enjoyable and productive work environment for students and faculty using the new facility.

## **GOALS AND OUTCOMES**

### **Goals**

The overriding goal for the project was to establish a significant sustainable design element at the new science center that will provide an iconic feature near the main entrance of the campus, create an interactive campus community effort and educational opportunity, and begin to establish a more visible momentum toward more sustainable efforts in the future.

## **Accomplishments and Outcomes**

The building and the new Green Roof are brand new additions to the campus.

The project positively impacts all who would visit the space by bringing nature right into the building. We took a 5,000 sq. ft. space that could have been left as a drab roof and introduced a planting scheme, surrounded by benches and places to view the beauty of the campus.

## **Challenges and Responses**

The major challenge was the funding for the project. To address this issue, until funding was confirmed, the roof space was designed and constructed to allow for a future installation.

When our Physics Department moved from being a minor to a major area of study, they needed exterior space for celestial viewing purposes. When part of the roof deck was determined to be the location for this purpose, it started our need to incur costs for railings and decking, etc. Consideration of these costs helped pave the way for finishing the space as originally designed.

## **Campus Climate Action: Your School's Carbon Footprint**

The college recently completed a Carbon Footprint analysis. The year round energy saved by the additional planting depth will be beneficial to offset CO<sub>2</sub> emissions.

## **ENGAGEMENT AND SUPPORT**

### **Leaders and Supporters**

The New Science Center Building Committee led the efforts for this project with the support of the Board of Trustees.

### **Funding and Resources**

The entire building project will come in under the overall 34 million dollar budget. The Green Roof Project was \$67,320 that included the drainage board, aggregate, soil, ballast, walkways and plantings.

### **Education and Community Outreach**

Our plans for the green roof as well as the surrounding landscape project were part of the discussions with our local Conservation Commission as well as Planning & Zoning Board.

### **National Wildlife Federation's Campus Ecology Program**

We used the following resources: *Campus Environment 2008* and *Chill Out*.

## **CONTACT INFORMATION**

Stonehill College  
Roger S. Goode, Jr.  
Associate Vice President for Operations Management  
320 Washington Street, Easton, MA. 02357  
Phone: 508-565-5200  
Email: rgoode@stonehill.edu

### **ARCHITECTS:**

The SLAM Collaborative  
80 Glastonbury Boulevard, Glastonbury, CT 06033  
860-659-1010  
250 Summer Place, Boston MA 02210  
617-357-1800

Green Roof Designer: William Cone, ASLA; Email: cone@slamcoll.com  
Project Manager: Rick Polvino; Email: polvino@slamcoll.com  
Design Architect: Paul Baldinger; Email: baldinger@slamcoll.com  
Project Architect: John Benson; Email: benson@slamcoll.com

**VEGETATED ROOF INSTALLATION:**

Greenscape, Inc.  
100 Revolutionary Drive  
E. Taunton, MA 02718  
508-977-9100  
Jim O'Neil; Email: james@greenscapemass.com

**ROOF INSTALLATION:**

Greenwood Industries  
P.O. Box 2800  
Worcester, MA 01613  
508-865-4040  
Eric Roth

**ROOF SYSTEM:**

Maloney Morris Associates for American Hydrotech, Inc.  
15 Alderwood Drive  
North Easton, MA 02356  
508-238-0377

**Case study submitted by:**

Roger Goode, Associate Vice President for Operations Management, rgoode@stonehill.edu

**MORE ABOUT YOUR SCHOOL**

**Campus Sustainability History**

Stonehill Goes Green is a campus-wide initiative to promote environmental sustainability within the Stonehill community through policies and practices including recycling, efficient energy use, and waste reduction .

This effort is being guided by the Environmental Stewardship Council, which functions in an advisory capacity to Stonehill's Associate Vice President for Operations, Roger Goode. The council is charged with developing, recommending, and maintaining a series of sustainability goals improving the effort to reduce Stonehill's carbon footprint. The council's work takes the form of recommending policies and actions, increasing awareness of environmental issues and disseminating information about ways the Stonehill community can contribute to these efforts. The website is <http://www.stonehill.edu/x14431.xml>.