

Facts About the Sloped Green Roof at the Gwinnett Environmental & Heritage Center

Here are some interesting facts about the Gwinnett Environmental & Heritage Center's extensive green roof system, which was designed and specified by the architecture firm Lord, Aeck & Sargent:

- It's 40,000 square feet, spanning nearly an acre.
- It's Gwinnett County's first green roof.
- It's the largest sloped green roof installation in the United States¹. More than half is 4:12 pitched, which means that for every 12 inches across, the roof rises by 4 inches. That's a very steep slope for a vegetated roof.
- It's also one of the largest green roofs in the Southeast.
- Its vegetated roof surface reduces the high surface temperatures associated with a conventional roof, mitigating the heat island effect and reducing air conditioning needs.
- Its physical properties dramatically reduce noise propagation, providing a uniquely quiet interior environment.
- It reduces storm water runoff. Roof drainage is channeled through interior valleys with tapered insulation to exterior overhang areas outside the exterior walls. Water drainage is slowed as it percolates through the system instead of being piped directly into a storm sewer system.
- It consists of 4-inch-deep growing media, vegetation and a membrane roof assembly (see accompanying green roof Construction Overview). The design load of 35 pounds per square foot is supported by steel columns and wood trusses.
 - The growing media, provided by Chicago-based American Hydrotech Inc. and made by local supplier EARTH products, is an innovative, specially engineered soil made of organic compost and expanded clay. A special conveying system was used to blow the soil onto the roof. (see photo, p. 2)
 - Vegetation consists of six different species of drought-resistant flowering sedum, one of which is native to Georgia. All varieties are proven in green roof applications.
- To help confine and stabilize the soil on the sloping roof, American Hydrotech used Presto-Alcoa's commercial version of a system originally developed for military applications. In fact, this system of perforated polyethylene strips, joined in accordion fashion to form a dimensional mesh, was originally developed for landing strips and roads in Operation Desert-Storm. Generically referred to as a "cellular confinement system," it looks like this:

- more -

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Photo courtesy of Lord, Aeck & Sargent

Photo caption: Workers from ProLandscapes LLC use a special system to blow specially engineered soil into the cellular confinement system on the extensive sloped green roof at the Gwinnett Environmental & Heritage Center in Buford, Georgia.

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NOTE TO EDITORS: For further information about the Gwinnett Environmental & Heritage Center, see accompanying press materials including:

1. Gwinnett County Educational Center – A Working Model of Sustainable Design – Now Open for K-12 Students and Adults
2. Gwinnett Environmental & Heritage Center “Green” Design Strategies
3. The Sloped Green Roof at the Gwinnett Environmental & Heritage Center – Construction Overview

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January 2007

¹the genroof projects database: <http://www.greenroofs.com/projects>