

The Sloped Green Roof at the Gwinnett Environmental & Heritage Center – Construction Overview

At 40,000 square feet, much of which is at a pitch of 4:12, the extensive green roofing system at the Gwinnett Environmental & Heritage Center in Buford, Georgia, is the largest sloped green roof installation in the United States¹, and one of the largest green roofs in the Southeast United States. Steel columns and wood trusses support a design load of 35 pounds per square foot.

Designing and specifying the roof system were challenging for the architecture firm Lord, Aeck & Sargent, especially because of the 4:12 pitch.

Following is a step-by-step overview of the roof's construction process:

1. A Tectum roof deck was laid on top of the structure's framing, which comprises dimensional lumber trusses on 4-foot centers with 4x4 wood purlins. The Tectum deck, made of concrete and rapidly renewable aspen wood fiber, was chosen because of its ability to mitigate noise inside the building.
2. Georgia-Pacific's DensDeck[®], a sheathing material made of fiberglass and reinforced gypsum, was laid on top of the roof deck. It provides a smooth surface to apply the membrane roofing.
3. Next, a hot fluid rubberized asphalt roof membrane was applied directly to the sheathing. The product, the Monolithic Membrane 6125-EV[®] with Hydroflex[®] Protection Element from American Hydrotech, Inc.[®], provides seamless waterproofing. The soft, hot-applied rubberized membrane, which utilizes recycled rubber, is protected by a cap sheet.
4. A high-density polyethylene protection sheet was laid on top of the roof membrane to act as a root barrier.
5. To meet the thermal insulation goals for the building envelope, an Inverted Roof Membrane Assembly (IRMA) was used. The IRMA includes a 3-inch Dow-Corning STYROFOAM[™] product made of extruded polystyrene installed above the root barrier.
6. Next came an American Hydrotech Hydrodrain[®] drainage mat, the same type that also was used between the building's concrete walls and the recycled granite stones that clad the building's exterior.

- more -

Lord, Aeck & Sargent / The Sloped Green Roof at the Gwinnett Environmental & Heritage Center – Construction Overview

Page 2

7. To help confine and stabilize the soil on the sloping roof, a “cellular confinement system” was used. Provided through American Hydrotech, this is Presto-Alcoa’s commercial version of a system originally developed for military applications. 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.
8. Next, a hose-like system was used to blow specially engineered 4-inch-deep growing media into the cellular confinement system. Supplied by American Hydrotech, the soil is called Hydrotech Lite Top and was locally manufactured by ERTH Products.
9. Finally, six varieties of drought-resistant, flowering sedum, one native to Georgia, were planted. All of these have been proven in green roof applications. An 800-square-foot test section of the roof is being used to test indigenous granite outcrop sedum species unique to Georgia with the goal of developing a regional palette of plant species for green roofs.
10. Here is the final product:

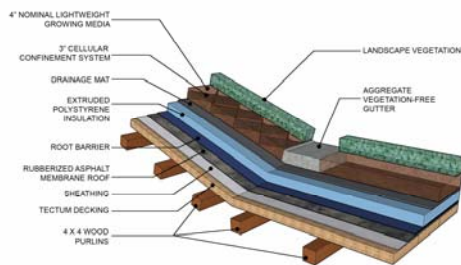


Image and photo courtesy of Lord, Aeck & Sargent

The Green Roofing System Team

Client: Gwinnett County, Georgia

Architect: Lord Aeck & Sargent, Atlanta

Landscape Architect: The Jaeger Co., Gainesville and Athens, Georgia

General Contractor: Juneau Construction Co., Atlanta

Roofing Trade Contractor: Metro Waterproofing, Inc., Atlanta

Landscape Trade Contractor: ProLandscapes LLC, Atlanta

Roof Sheathing: Georgia Pacific, DensDeck®

Roof Membrane: American Hydrotech, Inc.®, Monolithic Membrane 6125-EV® with Hydroflex® Protection Element

Lord, Aeck & Sargent / The Sloped Green Roof at the Gwinnett Environmental & Heritage Center – Construction Overview

Page 3

The Green Roofing System Team (cont'd.)

Root Barrier: American Hydrotech, Root Stop 40

Insulation: Dow Corning, STYROFOAM™ extruded polystyrene

Drainage Mat: American Hydrotech, Hydrodrain®

Cellular Confinement System: American Hydrotech, GardNet™

Growing Media: American Hydrotech, LiteTop®

DensDeck, Monolithic Membrane 6125-EV®, American Hydrotech, Inc.®, Hydroflex®, STYROFOAM™, GardNet™ and Hydrodrain® are trademarks or registered trademarks of their respective manufacturers.

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

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

or contact:

Ann Kohut
Kohut Communications Consulting
770-913-9747
annielk@bellsouth.net

Ken Higa
Lord, Aeck & Sargent
404-253-6732
khiga@lasarchitect.com

###

January 2007