Environmentally Responsible Design

The Fencing Academy of Philadelphia
Green Roof

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The Project

The Fencing Academy of Philadelphia Demonstration project by EPA

Roofscapes Inc.

• Area covered = 3,000 sq. ft.
• Total thickness = 2.74 inches
• Wet weight = 17 lb/sq. ft.
• Predicted 54% reduction in annual runoff
Green Roof 101

From the Bottom Up

- Waterproofing Layer
- Drainage Layer
  - Geotextile grid
- Soil Layer
  - Organic humus material
  - Shale/porous media
- Plant Layer
  - Sedum
The Benefits

– Runoff Reduction
– Air & Water Quality Improvements
– Aesthetic Improvements
– Reduced Urban Heat Island
More Benefits

• Temperature Mitigation
• Extended roof life
  – Wear and tear
  – Thermal expansion and contraction
  – UV exposure
• Energy efficiency for building
Design

– Extensive ($8-20/sf) vs. Intensive ($15-25/sf)

– Structural Integrity of the building
  – Increased dead load ~15 psf wet

– Average rainfall

– Soil medium/ Plant species

– Geotextile Design

– Cost
Sources

– http://www.glwi.uwm.edu/research/genomics/ecoli/greenroof/roofinstall.php#costs
– http://commons.bcit.ca/greenroof/infrastructure.html