



GREENROOF

SOILMatrix™

GIVES YOUR GREENROOF

THE LIGHTWEIGHT ADVANTAGE



(Above) Intensive Roof Garden
North Park 400, Atlanta GA
Installed 1997; Pictured 2002



(Inset) Aerial view of North Park
roof after installation in 1997



7-acre rooftop garden atop LDS Conference Center in Salt Lake City, UT.



Perimeter planting on roof of LDS Conference Center in Salt Lake City, UT.



Extensive greenroof garden, City Hall, Atlanta, GA, 2004



SOILMatrix installed by blowing equipment atop six-story Atlanta City Hall

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SOILMatrix has a long history of success in horticultural applications all over the world. It is marketed under various trade names and has established itself as the standard for creating planting media for rooftop gardens. This track record of proven performance demonstrates how SOILMatrix, at about 50% of the weight of natural planting media, contributes to sustainable development by conserving energy, reducing trucking requirements and minimizing the impact on structures. The use of this environmentally friendly ceramic material in green-roof design helps address important issues such as managing storm water runoff, improving water quality, reducing urban heat, conserving energy, lowering dead load and increasing green space.



SOILMatrix being installed at LDS Conference Center

Greenroof Planting Media

One of the most important components to both extensive and intensive greenroof systems is a quality planting medium. Because of the complex nature of greenroof construction and the difficulties of access after completion, the planting media must be able to support and sustain plants for the duration of the intended life span of the roof. A well-designed planting medium will have the following physical characteristics:

- **Be free of silts and clays that could clog the filter fabric;**
- **Have permanent internal aeration even after several years of consolidation;**
- **Insure adequate drainage;**
- **Insure stable root support;**
- **Not degrade, breakdown or shrink in volume over time.**

SOILMatrix is the environmentally friendly answer that provides a long-term solution to the above complex design requirements.

Besides exceeding all the requirements of an ideal planting medium, SOILMatrix provides additional important benefits. Its reduced weight can often accommodate structural design requirements; yet it is heavy enough to avoid loss caused by excessive wind or water. Its angular, stable and



SOILMatrix planting medium promotes healthy root development.

porous ceramic nature ensures an adequate supply of air to enable plants to be established quickly and develop healthy root systems. Ample aeration increases the insulative properties of the planting media and helps reduce energy consumption as well as lessen the urban heat island effect. Overall project costs are often reduced because SOILMatrix can also serve as the drainage portion of the greenroof system. When used for storm water management, the porous planting medium allows rain water to readily penetrate the soil surface. This reduces runoff and allows pollutants to be naturally filtered and remediated thereby improving water quality.



Connecticut convention Center, Hartford, CT. 9th floor walkway from the convention center to the parking garage.



SOILMatrix particle showing interior voids

What is SOILMatrix?

SoilMatrix is a lightweight, ceramic material produced by expanding and vitrifying select shales, clays and slates in a rotary kiln. The process produces a high quality ceramic aggregate that is structurally strong, physically stable, durable, environmentally inert, light in weight, and highly insulative. It is a non-toxic, absorptive aggregate that is dimensionally stable and will not degrade over time.

SOILMatrix: A comparison to other aggregates

Natural sand and soil are heavy. They frequently require that structural modifications be made to the project's design. Native soils have silts and clays that may clog the filter materials or drainage layers and reduce effectiveness. The physical properties of natural volcanic aggregates vary widely with source and location. Natural materials may degrade and compact over time, and require additions to or replacement of planting media. Some horticultural products used in greenhouses and container planting, such as vermiculite and perlite, are extremely light in weight and do not offer adequate anchorage and support for larger plants. In exterior applications vermiculite and perlite often float to the top of the planting media where they can be carried away by wind or water.



SOILMatrix

Tubes containing equal weights of soil, gravel, SOILMatrix, limestone and sand to demonstrate the difference in relative volume.

LEED™ Benefits

The Leadership in Energy and Environmental Design (LEED) system was designed by the United States Green Building Council (USGBC) to evaluate the influence of building design and construction on the environment. SoilMatrix is an environmentally friendly, lightweight, ceramic product that saves material, labor and transportation cost. It also improves the functionality and service life when used in greenroofs and other planting media. These benefits support sustainable development and contribute to designs becoming LEED certified. For more detailed information on LEED, see ESCSI Publication # 7700.

LEED-NC Rating System Summary (Version 2.1)

Category	Available Points	Points Where SOILMatrix Can Contribute
Sustainable Sites (Section 6.1, 6.2.7.1,7.2)	14	4
Water Efficiency (Section 1.1, 1.2, 2)	5	3
Energy & Atmosphere	17	(see note 1)
Materials & Resources (Section 5.1, 5.2)	13	2
Indoor Environmental Quality	15	(see note 2)
Innovation & Design	5	(see note 2)
Total Possible Points	69	9+

Note (1): 1-10 points can be awarded for energy cost savings of 15%-60% for new buildings and 5%-50% for existing buildings. Improving the thermal performance of building materials contributes toward obtaining these credits. **Note (2):** Ideal for indoor planting media.

SOILMatrix: The Versatile Planting Medium

Designers can count on SOILMatrix to be predictable, stable and highly dependable for the duration of the greenroof. The planting media mixture will vary depending on the climate region, application, aggregate and types of plantings specified. **For optimal results it is essential to consult with the SOILMatrix supplier during the design phase of the project.**



Sedums flourishing in extensive SOILMatrix blend



2 views of greenroof at LDS Conference Center, Salt Lake City, UT



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**SOILMatrix is readily available throughout the United States and Canada,
and is sold under various trade names.**

For additional information and technical support contact the local supplier or



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