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WEST HARTFORD 1854

M&J ENGINEERING

BENEFITS OF SOIL CELLS



Image: Deeproot's Silva Cell Technology

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Revitalizing the Earth and Communities

Soil cells are innovative structures designed to enhance urban tree growth and stormwater management. They provide a solution to the challenges of soil compaction and limited soil volume in urban environments.

M&J Engineering is proud to be incorporating Soil Cells in current and future projects.

- **Functionality**

  Soil cells contain lightly compacted soil that supports tree root growth and treats stormwater on location. This helps in growing large, healthy trees and managing stormwater runoff.

- **Design**

  These cells are designed to be installed under paved surfaces, such as sidewalks, allowing trees to grow in urban areas without disrupting the infrastructure above.

Underneath the surface of sidewalks and roadsides, lies a grid of reinforced polymer polypropylene, capable of supporting many tons of weight above - including concrete, vehicles, pedestrian foot traffic, and more. The decreased soil compaction as a result provides numerous benefits.

Read More on Our Website!



Image: Cutaway View of Soil Cell Structure Underground

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Practical Use

Soil Cells in West Hartford Center

M&J is overseeing reconstruction of LaSalle Road and Farmington Avenue. Existing trees necessitate frequent maintenance due to soil over-compaction and will be removed due to poor health, abnormal growth patterns, and root damage to infrastructure. New trees will be planted in soil cells to ensure a healthy root system that can thrive in uncompacted soil.

Read More on WestHartfordct.gov



Root Damage to Sidewalk in West Hartford Center



Image: Greenblue Urban Airspading Roots in Soil Cell



Gravel Based SS | Sand Based SS | StrataCell

Image: Greenblue Urban and Bartlet Tree Labs, USA- Tom Smiley

Soil cells range from $15 to $26 per square foot and are more labor-intensive due to excavation, filling, and backfilling compared to traditional methods.

Despite higher upfront costs, trees planted in soil cells tend to grow faster and healthier, which can lead to lower long-term costs and greater environmental benefits.

Soil cells prove to be much more effective than sand or gravel structural soil (SS) applications.

Stay Tuned for More Updates!

Benefits of Urban Trees Rooted in Soil Cells:

- **Cooling:** Soil cells prevent compaction, helping trees cool urban areas through shade and evapotranspiration.
- **Air Quality:** Healthy trees supported by soil cells filter air and produce oxygen more effectively.
- **Water Management:** Soil cells improve drainage, aiding trees in managing stormwater and preventing flooding.
- **Soil Health:** They maintain soil structure, promoting robust root growth.
- **Wildlife Habitat:** Healthier trees provide better habitats for urban wildlife.
- **Property Value:** Thriving trees increase property values and aesthetic appeal.
- **Energy Savings:** Strong trees reduce energy costs by providing natural cooling.
- **Mental Health:** Healthy trees contribute to improved mental well-being.