SOIL VOLUME TECHNICAL SHEET

1 TREE SIZE ∝ SOIL VOLUME

The ultimate size of a tree is dependent upon the amount of healthy soil it can access.

DeepRoot's new Structural Cell supports traffic loads while providing uncompacted soil volumes for large tree growth and on-site stormwater management. The underground modular framework provides unlimited access to healthy soil which is the critical component in growing large functional trees in urban settings. Combining stormwater management and large, healthy urban trees provides many benefits including increased sustainability in design, water management, and urban heat island effect reduction.

Tree size – measurable by crown spread and trunk diameter – is in direct proportion to soil volume, meaning that the more access to healthy, uncompacted soil a tree has, the healthier, more beautiful, and functional it will be. DeepRoot's new Structural Cell integrates the demands of engineering and construction with the soil volume and soil quality needed to grow a tree capable of making significant contributions to the community. The introduction of the Structural Cell means that a sensible, eco-friendly way of managing several of the most important issues of our urban infrastructure – stormwater, heat island effect, and air quality, among others – is easier and more cost effective than ever.

SOIL QUALITY

Soil quality is a critical component of creating landscapes that are both functional and beautiful. According to the Soil Science Society of America, "soil quality is the capacity of a specific kind of soil to function…to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation."

Current engineering standards for paving and hardscapes typically lead to very poor soil quality and biology. High compaction, inorganic matter and pollutants in the soil all contribute to the premature deaths of urban trees.

The use of DeepRoot's Structural Cell can eliminate many soil quality problems. The Cell is 92% void with 10 ft3 of soil volume (+/- .25 ft3) per unit, and is designed to be filled with soil. The soil within the cell can be customized to meet specific tree and stormwater functions while supporting paving, utilities, and other infrastructure to AASHTO H-20 standards. Soil biology, quality, and engineering requirements are no longer incompatible goals.

Create the soil you need

Depending on the specific goals of the site (large trees, stormwater management, or a combination) the soil within the Cells can be tailored to maximize soil function for those conditions. Alternatively, if the quality is good enough, the native soil can be used to maximize sustainability.

Cost Effective

The cost of replacing failed trees in projects is significant. Even more costly is failing to realize the aesthetic vision and ecological benefits of the trees that were originally planted. DeepRoot's Structural Cell provides the tools to achieve the benefits of trees while meeting the engineering needs of paving and hardscapes.

DeepRoot® URBAN LANDSCAPE PRODUCTS