



**LANDTECH SOILS**  
Urban Greening Solutions



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# LANDTECH SOILS

## Urban Greening Solutions

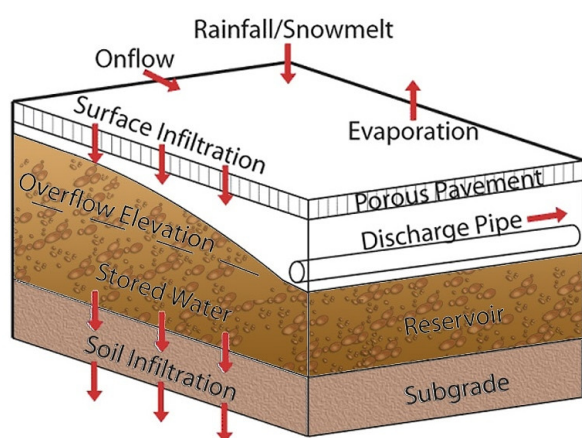
### CU-Structural Soil and civic storm water attenuation systems

Developed by Cornell University, CU-Structural Soil is a cost effective solution for mitigation of urban storm water on civic drainage systems. CU-Soil was originally designed to provide a healthy, load-bearing rooting medium for urban tree planting over time Cornell found through their R&D that when CU-Soil is combined with a porous paving system it acts as a rainwater attenuation system to help mitigate storm events. In Europe CU-Soil complies with SUDS obligations for all urban development projects.

CU-Structural Tree Soil' has been developed and extensively tested by Cornell University over the past twenty years, to develop a structural tree rooting medium that can be compacted to meet both Engineer's load bearing standards for the construction of the sub-base for paved surfaces, access roads, car parks etc, and to allow tree roots to grow freely beneath paved area, thereby providing an environment for the healthy growth of the tree as well as greatly reducing the likelihood of heaving or cracking caused by the tree roots.

### Rain water attenuation - SUDS

CU-Soil allows for the opportunity to develop a storm water reservoir, with up to 40% macro-pore spaces within the material, the attenuation area can be sized to accommodate the rainfall run-off of even a 50 year rain fall event. When used in conjunction with a porous surface material CU-Soil is particularly effective for reducing the burden on current urban storm water facilities. CU-Soil can be an important element in helping to meet SuDS requirements in an urban development.



CU-Soil installation – Rain water attenuation area

Table 2 Reservoir Sizing – 24 hour rain event

Size of rain Event		Required Reservoir Depth	
Inches	mm	Inches	mm
1.8"	46	6"	152
3.6"	91	12"	305
5.4"	137	18"	457
7.2"	183	24"	610
9"	229	30"	762
10.8"	274	36"	914

Figures relate to rainfall volume of same size area as the reservoir – adjust for area and rainfall volume from buildings if included.

Find Out More At  
[www.landtechsoils.ie](http://www.landtechsoils.ie)

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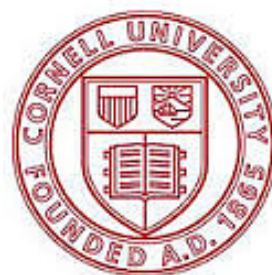
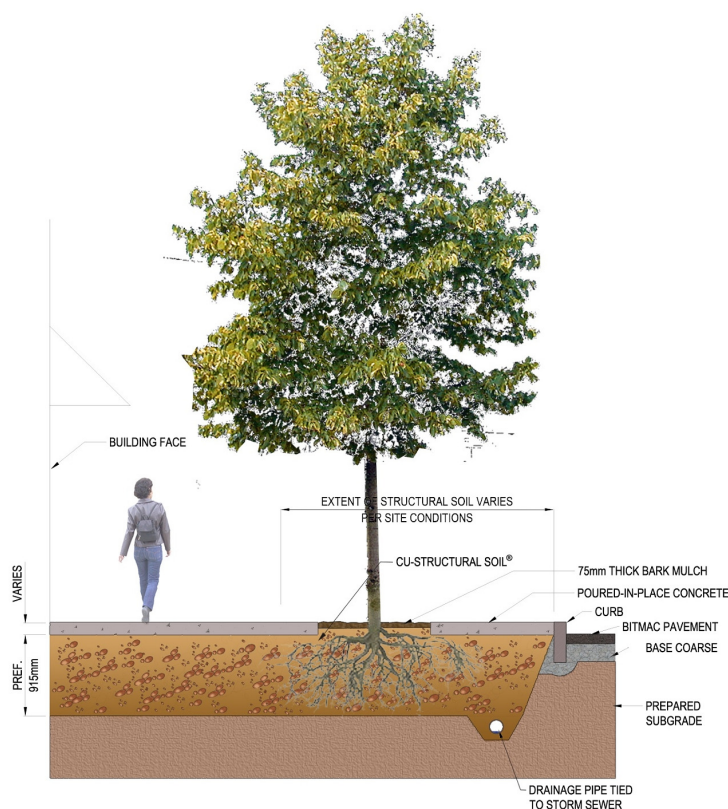


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### Benefits of CU-Structural Tree Soil

- Satisfies the Engineer's Structural Requirements
- An engineered structural base for paved surfaces
- Supports paved surfaces
- High degree of air and water flow
- Satisfies the Horticultural - Root systems requirements
- Higher level of nutrients and moisture to the roots
- Promotes downward growth & development of roots
- Significantly Improved Urban Tree Survival Rate
- Considerably Cheaper than the Alternatives
- Reduced Root Damage to Pavements
- Simplifies Ground Working
- Environmentally Friendly
- CU-Soil™ is Fully SuDS Compliant
- Meets Urban Load Bearing Requirements
- Complements Tree Anchoring Systems
- Perfect for Underground Services
- Porous Paving & CU-Soil™ Can Act as a Water Reservoir thus Mitigating Storm water



Cornell University

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How CU-Soil is Made and why you should utilise it

CU-Soil is a root zone material that is made up of an angular stone with a loamy soil (or suitable soil) that is bound by a bio-gel. This material can be used in conjunction with a porous paving asphalt or resin bound stone paving system to create a water reservoir to help mitigate storm water and CU-Soil is fully compatible with SuDS requirements. CU-Soil provides trees with the required quantities of water oxygen, nutrients and space for the trees root system, this is accomplished by design.

Spaces between the angular stone allow the tree roots to penetrate into the ground. This effectively eliminates the common heave effect while providing the engineers with the required load bearing requirements for urban planning. The results and the benefits from using CU-Soil in the urban environment can be seen in the short term. Pavements are less likely to become cracked by tree roots, water can penetrate into the ground when used with a porous paving system and in cases of heavy flooding, storm water can be temporary stored in a low cost but effective water reservoir.

Trees can enjoy a full lifecycle, help absorb larger quantities of carbon dioxide, filter the air and provide shade which will mitigate the urban heat island effect. Trees planted with CU-Soil will increase house prices and provide peace of mind for citizens and in addition to this with more trees in our towns we can provide vital habitats for the other species that share our urban environment. It is important that we provide the best urban greening solutions when building our towns and cities.

However, in this economy it is essential that the materials we use in our small or large projects are completely sustainable and economically viable. CU-Soil is made from natural materials and is designed to for sustained longevity this is to insure value for money and to provide a trees with an envirenment in which they can live for their 50 year lifespan. "Trees outstrip most people in the extent and depth of their work for the public good." (Sara Ebenreck, American Forests)

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