

Root Enhancement System®



Why Use The Root Enhancement System?

Urban soils are under constant stress and become compacted from construction and other activities. Trees planted in urban areas face many challenges that reduce their ability to grow and remain healthy. Lawns, building foundations, pavement, landscaped areas, and other obstacles limit a tree's ability to absorb water and nutrients. Trees living in compacted soils are smaller and die at a much younger age if compaction is not treated.

Rainbow Treecare has developed a Root Enhancement System® (RES) that promotes root growth and improved tree health. While we cannot replace all of the soil under a tree or replicate forest soils in an entire yard, our Root Enhancement System can create the perfect growing environment around the base of the tree where a large concentration of roots lie.

Steps Involved In The Root Enhancement System®:

1. Root Collar Excavation: Roots around the base of the tree are exposed by forcing high-pressure air into the soil with a tool called the AirSpade.

Evaluation of root structure and health: Roots that encircle the trunk are known as girdling roots, which constrict the flow of water and nutrients in the tree. Viability of the tree and chances of success are judged by several factors: depth of the root flare, number and size of girdling roots, and severity of compression of the trunk. If the examination process reveals that the tree is a candidate for our Root Enhancement System, we will proceed with the following steps.

2. Treatment of Girdling Roots:

Girdling roots may be cut to release compression of the trunk causing damage to the tree. Some trees may not be determined as feasible to continue the process. In severe cases, a tree may incur greater damage in the attempt to save it than it would suffer if left alone. Not all trees respond well to treatment, and we may choose to halt the process at this point. If the examination and treatment process reveals that the tree is a candidate for our Root Enhancement System, we will proceed with the following step.

3. Application of Organic Matter:

Roots within a 3-7 foot radius of the trunk are exposed using the AirSpade. Turf grass within this area is removed to facilitate the process. A large volume of soil is loosened from its compacted state with the action of the AirSpade.

Roots in the loosened area are covered with Prescription Organic Matter. The AirSpade is used to mix the organic material into the existing soil.



Root collar excavation using AirSpade.



Pruning girdling roots.



Completed site after RES service with 3-4" of mulch.

A 3-4" thick layer of shredded hardwood mulch is placed over the treated area and saturated with water. **It is critical to keep the soil in this area watered to maintain a moist soil environment.** A drip irrigation hose may be installed beneath the mulch to allow you to continue this important aftercare for your tree. Your Consulting Arborist can provide more detailed information about watering your tree.

Two Important Components Of The RES Process:

Prescription Organic Matter (POM)

Our Prescription Organic Matter is a mixture of composted materials meant to create soil conditions similar those in a forest, which are much healthier for trees than urban soil conditions. Different mixtures of POM have been formulated for individual trees based upon species, age and existing soil conditions. We often prescribe the addition of specific elements such as manganese or iron if necessary.

Biochar

Biochar is charcoal made from woody plant material and is used as an amendment to improve soil quality.

Charcoal has long been used for its ability to absorb odors and toxins. Biochar increases retention of water and nutrients in sandy soils and helps to loosen clay soils. Biochar also helps to fight climate change, as it converts urban wood waste to a stable form of soil carbon. The result is healthier trees that remove even more carbon from the earth's atmosphere as they grow.



Using AirSpade to mix in POM.



Biochar