

Air Knife Utilization/Soil Replacement Therapy in Tree Preservation



August before treatment

This oak provides high value and important presence to the left side of a dogleg left. A replacement tree, of any size, can not replicate the role of this specimen White Oak, *Quercus alba*. This tree has unique size, character and function for this property.

Tree Preservation activities were determined to be the best investment given the importance assigned to the tree and the projected costs of all available options.

The tree's growth rate was increasingly substandard. The canopy had thinned significantly over the years. Twig extension was marginal and the tree defoliated every August.

Absorptive roots were in decline due to heavy irrigation, compacted clay soils, aggressive turf management and probable Phytophthora infection.

Armillaria root rot is evident, depreciating buttress root and woody root integrity.

The Prescription for Preservation:

"Increase the entropy of the tree with chemical treatments to foster more growth.

Change root environments, create new root growth bunkers to stimulate new root extension and root mass."



(Armillaria) "Systemic Fertilizer applied"

Systemic fertilizer was applied to increase the entropy of tree: it is a proactive nutrition upgrade without depending on dysfunctional roots or stimulating turf.

Soil applied products may not be absorbed by a tree with dysfunctional or compromised roots in corrective dosages.

In-ground fertilization may stimulate pathogen action.

Increased entropy, (growth rate and vitality) creates a new energy base for the tree to respond to other corrective procedures.

Pacibutizol TGR (Tree Growth Regulator) was applied in late autumn to reduce canopy response to fertilizer and increase energy transfer to tree root zone.

As stand-alone treatments, systemic fertilizer and TGR application can provide benefits to all urban-scape trees.



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Sod cut and rolled for reuse.

Soil Replacement Therapy, SRT: utilizing the "Air Knife", was applied to excavate root zones, to foster new root extension.

This process produces benefits unavailable from any other procedure. No impacts on in-ground pipes, wires or the tree roots; only the soil is fractured and pulverized.



Air Spade utilized to pulverize soils and construct bunkers for new root zones.



Completed "bunker" excavation with all roots intact



Five bunkers, to be back filled with amendments; all done in half a day

***"Tree root formation, tip extension and root nutrient absorption are functions of soil physics, not soil chemistry!
Total root mass is not controlled by the plant, but by the soil dynamics."
Making new root environments is the best and most productive process in "tree renewal".***



Before and after, two years later, both pictures taken in August. Response has been so striking that two additional procedures have been completed, effectively reworking 40%+ of the tree's root mass!

For more information on SRT or other tree preservation procedures and Urban Forestry services:

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