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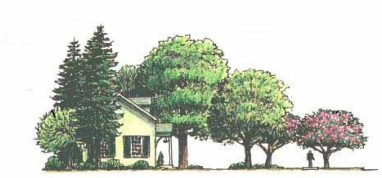

Center for Landscape and Urban Horticulture

Comparison of Structural and Noncompacted Soils for Trees Surrounded by Pavement

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Abstract. Trees in areas surrounded by pavement often have inhospitable rooting environments, which shorten their useful life expectancy. This trial was established to compare tree growth in five different soil treatment options under concrete pavement. Snowgoose cherry (*Prunus serrulata*) and Bosque lacebark elm (*Ulmus parvifolia*) were planted into 5.4 m^3 (189ft^3) of medium containing compacted soil, gravel/soil mixture, Stalite and Stalite/soil mixture, or noncompacted soil with concrete footings to suspend the pavement. Concrete was installed over the plot leaving an 80 cm (32 in) diameter hole around each tree. A variety of growth and health parameters were measured after 14 months. It was found that there was more trunk diameter growth with the noncompacted treatment than the Stalite and Stalite/soil treatments; more twig growth in the noncompacted and gravel/soil treatments than all others; higher relative chlorophyll rating in the noncompacted treatment than all others; and more root growth in the noncompacted treatment (elms only). Suspended pavement over noncompacted soils provided the greatest amount of tree growth and health and should be considered when designing urban planting sites for trees.
Key Words. Biobarrier; Bosque lackbark elm; CU soil; geotextile; planting pits; *Prunus serrulata*; skeletal soil; Snowgoose cherry; soil compaction; Stalite; structural soil; suspended pavement; suspended sidewalks; *Ulmus parvifolia*; urban plaza; urban tree planting.

Smiley et al.: Structural and Noncompacted Soils for Trees 2006. Aboriculture&Urban Forestry 32(4):164-169