



Root Barriers (Concluded)

activity on the soil (walking, driving vehicles or parking, for example) disrupts soil structure. These activities result in rutting, puddling and compacting of the soil, which lead to root injury and death.

Structures, which rely directly on the subgrade for support, such as retaining walls and concrete pavement installations are susceptible to changes in soil moisture levels that can cause differential movement within the subgrade.

Tree roots are very aggressive, growing near the soil's surface in search of water, nutrients, and oxygen. They can extend underground, spreading outward, two to three times the diameter of the tree canopy. As the tree grows, the roots grow, becoming larger and larger, exerting tremendous pressure on concrete and asphalt.

Moisture Movement in the Soil

Damage can also be caused by the effect tree roots have on the moisture movement in the soil. Where tree roots extract large amounts of water, the subgrade may shrink and cause damage to structures. Typically, the damage is not caused by direct physical pressure from the roots themselves but by radial growth of tree roots in the immediate environment. Gravel layers in subbase materials can create high humidity and aggressive tree species will take advantage of the enhanced conditions to increase their root growth.

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About the Author: Brian Burton is a Member is Standing Committee for Technical Evaluations for the Canadian Construction Materials Commission and is a regular contributor to many leading landscaping and engineering publications.

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