Get To Know Your Inner Tree

INSIGHT TREE IMAGING LLC

Level 3 Risk Assessment & Root Mapping

Root Mapping

The use of non-invasive ground penetrating radar (GPR) has been successfully used for below-ground root mapping worldwide for many years. Radar is an object-detection system that uses electromagnetic waves—specifically, radio waves—to identify the range, altitude, direction or depth and speed of both moving and fixed objects. It can penetrate hard surfaces such as asphalt and concrete and then enter the soil to identify roots and their depth on a large scale. This technology has proven to be a very effective tool for the arborist.

As the radar antenna is moved along the ground every 2/10ths of an inch a radio signal is released into the soil at a predetermined depth set by the technician. As this signal encounters a root, it is reflected primarily off the moisture within the root, then back to a receiver inside the antenna with surprising accuracy. The data is then recorded to a field computer and then analyzed by specialized root analysis software, which filters out unwanted objects the radar may find such as gopher tunnels, rocks, metal, or pipes.

Although radar imaging will not produce a picture of a root or roots, it will provide images of predicted root locations based on how this technology interacts with roots within the soil profile. Below are examples of the different ways collected field data is viewed through the computer software.

Ways Our Clients Have Benefitted from GPR

1. Isolating foundation damage from invasive tree roots.
2. Determining root location and density at construction sites for protected trees.
3. Determining the actual drip-line of trees for protection at construction sites.
4. Placement of swimming pools, leach lines and pipes to minimize root damage to existing trees.
5. Determining location placement of construction piers between lateral root systems for foundation or retaining wall construction.
6. Trenching near protected trees, knowing where and where not to dig.
7. Existing sidewalk, curb or driveway replacement, preventing root damage.
8. Determining root density and depth to evaluate a tree's stability.
9. Determining root density for placement of below ground tanks or equipment near protected trees.