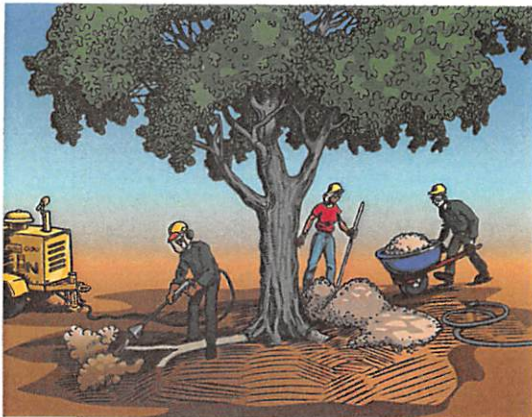


Improving Aeration of the Root Zone

Soil compaction and grade changes can reduce soil oxygen and limit water movement in the tree's root zone. If soil aeration can be improved, root growth and water uptake can be enhanced.

Aeration of the root zone may improve root health, and water and mineral uptake. One effective aeration method employs a high-pressure, air-excitation device, which pulverizes soil with minimal detrimental impact to roots. This process alone can be beneficial, or it may be combined with incorporation of soil additives and top dressing with organic mulch.

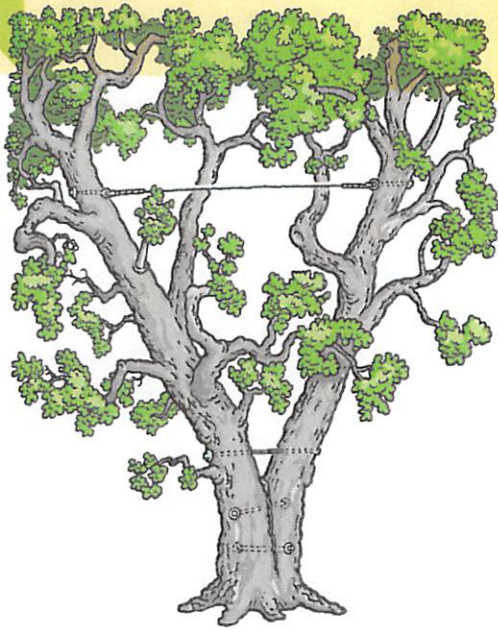


What About Fertilization?

Fertilization should be limited immediately following construction damage. Salts associated with quick-release fertilizers can draw water out of the roots and into the soil. Added nitrogen can stimulate top growth at the expense of root growth. Once recovered, fertilization should be based on the nutritional needs of trees on a particular site.

Monitoring for Decline and Risk

Despite your best efforts, you may lose some trees from construction damage. Symptoms of decline include smaller and fewer leaves, dieback in the crown of the tree, and premature fall color. Stressed trees are more prone to attack by certain diseases and pests, which further a tree's downward spiral. Severe damage and decline may also lead to defects and decay. Consult with an arborist for a professional assessment if you are concerned with your tree's health or structural integrity.



Cabling and Bracing

If branches or tree trunks need additional support, a professional arborist may be able to install cables or bracing rods. If cables or braces are installed, they must be inspected regularly. The amount of added security offered by the installation of support hardware is limited. Not all weak limbs are candidates for these measures.

Wound Dressings

Wound dressings were once thought to accelerate wound closure, protect against insects and diseases, and reduce decay. However, research has shown that dressings generally do not reduce decay or speed closure and rarely prevent insect or disease infestations. Most experts recommend that wound dressings not be used. If a dressing must be used for cosmetic purposes, use only a thin coating of a nontoxic material.

Irrigation and Drainage

One of the most important tree maintenance procedures following construction damage is to maintain an adequate, but not excessive, supply of water to the root zone. Water



Overwatering and poor drainage will result in tree decline.

trees as needed, especially during the dry summer months. A long, slow soak over the entire root zone is the preferred method of watering. Avoid frequent, shallow watering or overwatering. Poor drainage must be corrected or trees will decline rapidly.

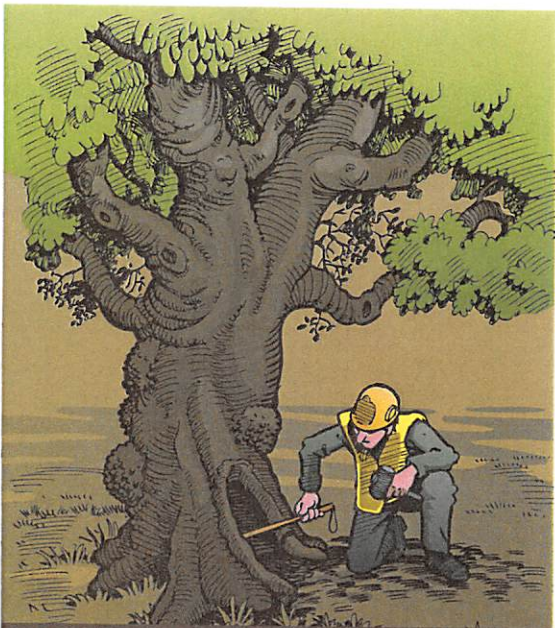
Mulching

Apply a 2- to 4-inch (5- to 10-cm) layer of organic mulch such as wood chips, shredded bark, or pine needles over a tree's root system for a simple and effective means of enhancing root growth. The mulch helps condition the soil, moderates soil temperatures, maintains moisture, and reduces competition from weeds and grass. The mulch should extend as far out from the tree as practical for the landscape site.

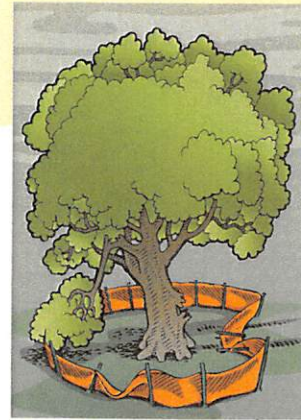
The processes involved in construction can be devastating to the surrounding trees if no measures have been taken to protect them. Remedial treatments may save some construction-damaged trees, but immediate implementation is critical. If you have trees that have been affected by recent construction, a professional arborist can assess tree viability and risk potential and recommend treatment options.

Damage Caused By Construction

- physical injury to the trunk and crown
- soil compaction in the root zone
- severed roots
- smothered roots from added fill soil
- increased wind and sunlight exposure
- stress due to grade and drainage changes



Treatment of Trees Damaged by Construction



Inspection and Assessment

Because construction damage can affect the structure and stability of a tree, your arborist should check for potential risks. A risk inspection may involve a simple visual inspection, or instruments may be used to check for the presence of decay. Identified risks can sometimes be reduced or eliminated by removing an unsafe limb, pruning to reduce weight, or installing cables or braces to provide structural support. If there is doubt about the structural integrity of a tree and the risk cannot be adequately mitigated, the tree should be removed.

Treating Trunk and Crown Injuries

Pruning

Split, torn, or broken branches should be removed. Also, remove any dead or diseased limbs from the crown of the tree. It is best to postpone other maintenance pruning, such as crown raising, for a few years. Do not thin or reduce tree canopies to compensate for root loss. There is no conclusive research to support this practice, and thinning the crown may stress the tree further.

Treating Damaged Bark and Trunk Wounds

Often, the bark may be damaged along the trunk or on major limbs. If this happens, remove the loose bark. Jagged edges can be cut away with a sharp knife. Take care not to cut into living tissues.