Treatment of Trees Damaged by Construction

Addresses tree damage assessment and remedial treatments that may preserve trees damaged during construction.

Construction can be devastating to surrounding trees if measures are not taken. Remedial treatments may save some trees, but immediate implementation is critical. A professional arborist can assess tree viability and risk potential to recommend treatment options for construction-damaged trees.

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.

Inspection and Assessment

- An arborist should check for potential risk to the structure and stability of a tree.
- A risk assessment may involve visual inspection, or instruments may be used to check for decay.
- Identified risk can be reduced or eliminated by removing an unsafe limb, pruning to reduce weight, or installing cables or braces for structural support.
- The tree should be removed if there is doubt about its structural integrity and the risk cannot be mitigated.

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-excavation device, which pulverizes soil with minimal detrimental impact to roots *(see figure above)*. 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 roots and into the soil.
- Excess nitrogen can stimulate top growth at the expense of root growth. The amount of nitrogen added should be based on soil or foliar nutrient analysis.
- Once the tree has recovered, fertilization should be based on the nutritional needs of the tree on its particular site.

Treating Trunk and Crown Injuries

Branch Damage

- Remove split, torn, or broken branches. Remove dead or diseased limbs from the crown.
- Generally do not reduce tree canopies to compensate for root loss; however, there are some cases where this is the best option.
- There is no conclusive research to support the practice of routine thinning for reducing water stress.

Treating Damaged Bark and Trunk Wounds

- Often the bark may be damaged on the trunk or lower branches. Remove the loose bark.
- Jagged edges can be cut away with a sharp knife.
- Be sure not to cut living tissues.

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.

Mulching

Apply a 2-4 inch (5-10 cm) layer of organic mulch such as wood chips, shredded bark, or pine needles over a tree's root system to enhance root growth. Mulch helps condition the soil, moderate soil temperatures, maintain moisture, and reduce competition from weeds and grass. The mulch should extend as far out from the tree as practical for the landscape site. *(See "Proper Mulching Techniques" brochure for more information.)*

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 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. If the soil is poorly drained, the irrigation level should be reduced to avoid saturating the soil, or drainage should be improved.

Cabling and Bracing

If branches or tree trunks are likely to fail, 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.

Monitoring for Decline and Risk

- Often decline in trees can take years to be easily seen. Monitoring trees helps to identify issues sooner.
- 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 insect pests.
- Severe damage and decline may lead to defects and decay.
- Consult with an arborist for an assessment if you are concerned with your tree's health or structural integrity.

What Is a Certified Arborist?

ISA Certified Arborists® are individuals who have proven a level of knowledge in the art and science of tree care through experience and by passing a comprehensive examination developed by some of the nation's leading experts on tree care.
ISA Certified Arborists must also continue their education to maintain their certification. Therefore, they are more likely to be up to date on the latest techniques in arboriculture.

Finding an Arborist

Visit TreesAreGood.org for free tools:

- The "Find an Arborist" tool can help you locate an arborist in your area.
- The "Verify a Credential" tool enables you to confirm whether an arborist has an ISA credential.

Be an Informed Consumer

One of the best methods to use in choosing an arborist is to educate yourself about some of the basic principles of tree care. Visit TreesAreGood.org to read and download all brochures in this series.

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