Landscape Bulletin #8

HOLDEN arboretum
HOLDEN FORESTS & GARDENS

Protecting Trees During WoodLot Construction

You love the trees on your property. The coolness and quietness they provide led you to choose this spot for your home. But it seems there is no other choice except to remove them-just five short years after building. Unfortunately, what caused their demise was construction damage-an all too common occurrence 5-10 years after building on a wooded lot.

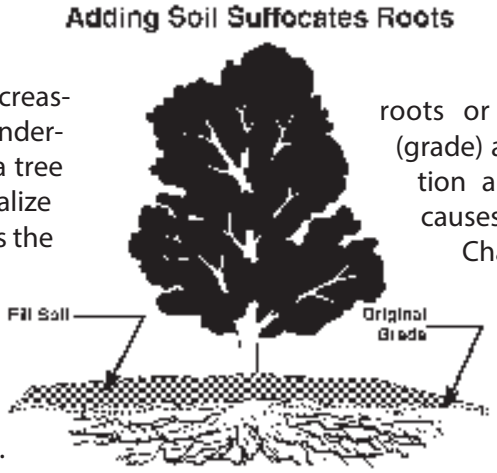
There is hope! More homeowners, city and regional planners, developers, and construction companies have shown increasing interest in working with nature to retain mature trees as a part of the landscape around houses and buildings. However, the right attitude must be matched with education and the proper actions to achieve desirable results.

WHY VALUE TREES

There are many practical reasons to preserve trees on your landscape. For example, you can save energy both in the summer and winter, as trees increase shade during the summer and block cold winds during the winter. Trees also offer food for wildlife in the form of fruit and nuts, as well as a habitat for nesting and breeding. Trees reduce noise pollution and control glare, providing a quiet, comfortable environment. For all of these reasons, it is no surprise that keeping trees on your property can automatically increase the value of your home.

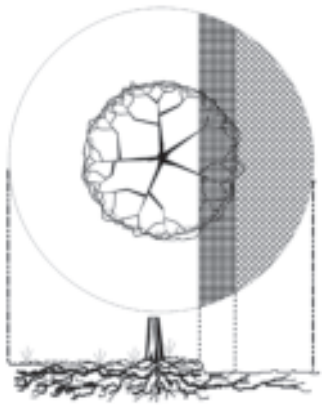
HOW CONSTRUCTION AFFECTS TREES

The most important factor in increasing the survival rate of trees is understanding how the various parts of a tree function. For example, once you realize that the outer bark of a tree protects the tree from disease and environmental damage, you can see why damage to the trunk by construction equipment weakens the tree and makes it susceptible to further deterioration.



GRADING CUTS KILL ROOTS

- lowering the grade 6 inches to dripline on one side—20% of roots die.
- lowering 1/2 way between dripline and trunk on one side—30% of roots die.



Construction damage results not only from direct injuries, but also indirect disturbances. In such cases, natural systems of drainage, soil texture and structure, nutrient availability, and sunlight levels are changed, all of which cause stress to the tree.

Tree roots are just below the surface about 8-12 inches, and may spread across to more than twice the height of the tree. Roots are the life-support system of the tree, providing water, mineral nutrients, and oxygen. As much as 80% of all landscape tree problems are caused by disturbing root systems. Roots are more sensitive to environmental changes than any other part of the tree.

Because tree roots are so close to the surface, any soil disturbance can cause damage. Cutting into the tree's roots or changing the ground level (grade) around a tree during construction are two of the most common causes of tree damage or death. Changes in the topography can change water flow-resulting in depriving water to or flooding trees. Excavation, traffic, and material storage under trees is also damaging to roots, as these all

cause compaction to the soil. The results of this compaction (cutting off air and water passages) show up slowly, so that you may not realize the damage until years later.

HOW CAN I PROTECT MY TREES?

Adverse physical and environmental impacts of development are greatly reduced when developers and builders use natural features as assets rather than obstacles to their construction plans. There are things you, too, can do to protect your trees. It is important to consider damage to trees before, during, and after construction. These easy steps will help to ensure you take the proper actions to protect our trees:

BEFORE CONSTRUCTION

Tree preservation should begin long before construction is even started. Since trees require special care, several precautionary steps must be taken to keep your trees healthy:

- **Based on your evaluation** of the entire woodlot, decide which trees and groups of trees are most valuable. Select trees that are healthy, remembering it is far easier, cheaper, and safer to remove trees before construction begins. (*An arborist can help you evaluate the health of your trees and decide on a plan of action for saving them).

- **Conserve blocks of trees** and try to **plan for a mix of ages and sizes** of trees; this will make the area more visually pleasing and will reduce the impact if a tree does die.

- **Prune** trees to help them survive the considerable stresses of construction activity (A good resource for pruning is your local tree service company)

- **Water** the entire root zone of each tree slowly so that the top 8-12 inches are thoroughly wet, since a tree's shallow roots are very subject to drought stress.

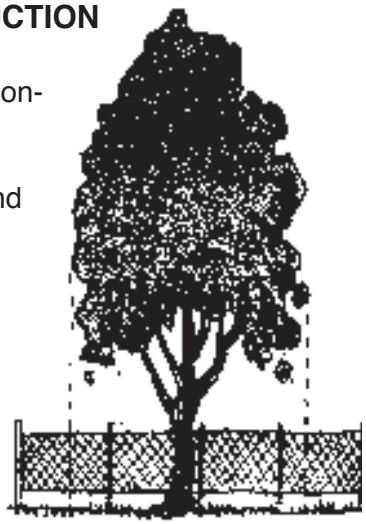
- **Work with the contractor** to decide and clearly mark areas to be used for construction storage, traffic, wastes, signs, etc.

- **Erect physical barriers** around trees or groups of trees that you want to save near construction activity. A "root protection zone" that includes one foot of radius for each inch of trunk diameter should be fenced off and protected from all disturbances.

DURING CONSTRUCTION

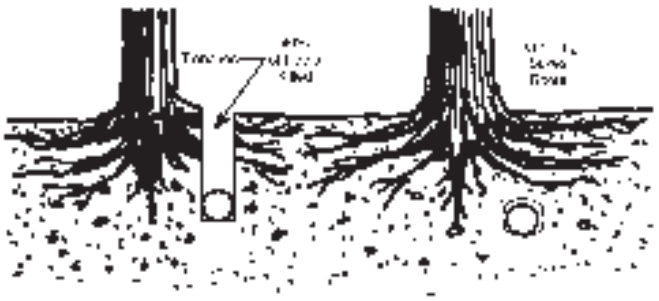
- **Communicate** with the construction crew and contractors throughout the construction process, monitoring their work and making sure your plans are being followed through.

- **Work with the utility contractors** to tunnel under or around tree roots. While trenching can kill 40-50% of a tree's roots, tunneling will do no damage to the tree.



Highly visible barrers that extend beyond the dripline are the best way to protect trees during construction.

- **Check the site** weekly for damage, repair any damage quickly, and water trees if necessary.



AFTER CONSTRUCTION

- **Provide adequate water** and **prune** trees regularly to remove dead or diseased parts.

- **Fertilize** trees on the first, third, and fifth year after construction.

- **Inspect** trees regularly and consult an expert if damage begins to appear.

A list of consulting Urban Foresters can be obtained from Drew Todd, Ohio Urban Forestry Coordinator, 1855 Fountain Square Court, H-1; Columbus, OH 43224-1383; (614)265-6707. www.dnr.state.oh.us/forestry/Urban/directory.htm

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