

"The best friend on earth of man is the tree: when we use the tree respectfully and economically, we have one of the greatest resources on the earth".

Frank Lloyd Wright



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Our Approach to Tree Preservation

There are many reasons we decide to preserve trees. They add grace and beauty to our landscapes, provide shade and protection for our homes, and increase our property values.

We know trees live in a delicate balance with nature, which construction can easily disturb, so how do we preserve them? What do we need to look for? What do we need to be concerned with?

The tree preservation process begins before construction. Whether we are looking at a group of trees, or an individual tree, there are several factors we look at.

1. **Tree Species:** Each individual species responds to construction procedures and injury differently. For example, sugar maples (*Acer saccharum*) low to moderate tolerance. They are tolerant of root loss, but have difficulties dealing with fill. Northern red oaks (*Quercus rubra*), on the other hand, have better tolerance of construction, being able to withstand root loss and some changes in soil and water better.
2. **Tree Health and Stability:** When examining a tree at the beginning, we must determine its current state of health. The stronger, healthier a tree is before construction begins, the better its chance of survival.
3. **Potential Longevity:** Younger trees are more likely to tolerate construction. Older mature trees are beautiful, but their age and longevity must be considered as they are less likely to tolerate construction impacts.
4. **Site Plans:** We must examine plans and determine whether or not the trees are suitable for the location. We look at what processes are going on near the tree and the location of the tree to future structures, walks, etc to decide whether or not the tree will do well in the location.

Once we have look at the trees and considered all of these factors, we can make better suggestions regarding the effort needed to preserve the trees and the likelihood of their long-term survival. We can then recommend the trees that should be preserved and what preservation steps need to be taken.

Tree Decline

The Life and Death of a Tree

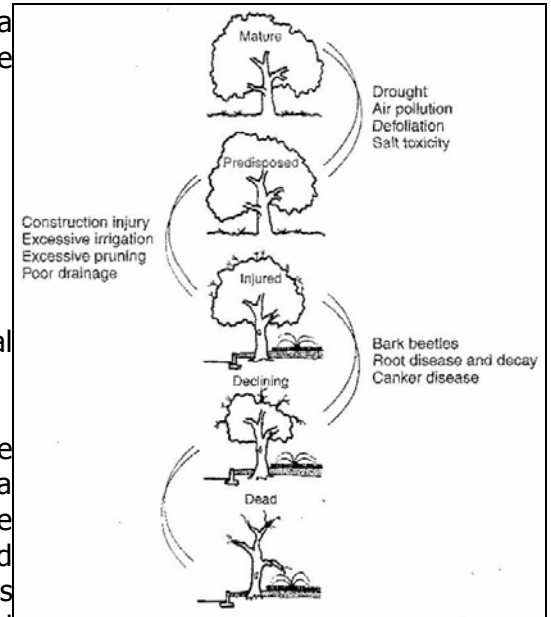
Tree decline is defined as the gradual loss of vigor and growth of a tree. Decline may occur with any species and is most common in urban situations where tree stress tends to be higher. In shade trees, it often appears as small, off-color leaves, early leaf drop and fall color, and dieback of twigs and branches.

Instead of a single problem, decline is typically caused by a combination of problems referred to as stress factors. These include:

- * insect attacks
- * adverse weather
- * soil compaction
- * construction damage.

Decline is a process that progresses over the course of several years.

In order to manage and care for trees, we need to understand the factors associated with decline. Occasionally a tree dies due to a single factor, such as a disease, or an environmental factor like wind or fire. For most trees, however, many factors are involved in their decline and death. As shown in the figure, decline tends to be caused by a combination of biological, cultural, and environmental factors. This path is referred to as the mortality spiral.



The Mortality Spiral.

Source: Harris, Richard W. *Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vines*. 1999. Prentice-Hall, Inc., Upper Saddle River, New Jersey.



This tree has been in a state of decline over the past few years due to the construction and other stresses.

Prevention is the key to avoiding tree decline.

Once symptoms are noticed, they are very difficult to reverse. There are many procedures that can be done to help prevent tree decline. To start, when planting a tree, choose a species that suits the site. Not all species are tolerant of wet areas or dry areas, so some research to figure out what tree would be most suitable may be required. Also, be sure the tree is properly planted. New trees need to be able to expand their root systems, so proper planting is critical.

Avoiding changes to the growing area of mature trees is also essential. This includes changing the grade, trenching within the root zones, soil compaction, and other processes common with construction. Trees are extremely dependant on their root systems. Roots are especially vulnerable to changes, including trenching and grading. Avoiding the critical root zones (especially within the dripline) when working near trees may help to preserve the trees.

The health of mature trees should be maintained with adequate water and fertilizer. Trees need 1 to 1.5 inches of water per week. This is especially important through the hot, dry summer months. Trees should also be monitored regularly for insect or disease problems and treated for as necessary. Regular crown cleaning is also necessary to clear the trees of deadwood, as well as diseased, broken, and poorly attached branches, and water sprouts. Some species may require annual crown cleaning. Consult one of Vine & Branch's Certified Arborists annually to evaluate the current condition of the mature trees and to be sure they have the proper care they need.

The Liability of Trees

In 1991, the Supreme Court of Indiana upheld a decision stating that a landowner "in an urban area is subject to liability to persons using a public highway for physical harm resulting from his failure to exercise reasonable care to prevent an unreasonable risk of harm arising from the condition of trees on the land near the highway."

The Supreme Court also determined that it was the landowner's "duty...to perform periodic inspections to be sure that the premises do not endanger those using the highway."

What does this mean to you? Specifically, if you have a tree that threatens a public roadway, you may be liable if the tree were to fall. You also must perform regular inspections of your tree to watch for any potential risk. This particular case dealt with trees endangering a highway. The same arguments, however, could be made for trees endangering the public in any area, including:

- * Your neighbor's home
- * Sidewalks
- * Playgrounds
- * Parking Lots

Two questions remain: *can you perform the routine inspections the law requires? Do you understand tree biology and tree characteristics well enough to recognize an "unreasonable risk"?*



From a distance this cottonwood (*Populus deltoides*) looks healthy.



This is a large decayed area on the same cottonwood.

Property owners are at risk of very costly negligence lawsuits for any harm resulting from trees. Often our clients do not realize the danger a tree presents. Many see green leaves and believe the tree to be healthy. You must understand tree decay and how it works. Decay can leave a tree in such a weakened state that it may fail, and yet the tree still looks healthy to an untrained eye!

We all understand how a visible dead tree endangers you and your neighbors. Live trees may also present a risk. We highly suggest live trees be inspected for any weaknesses that would cause them to present a risk.

Our Certified Arborists can assist you with your assessment and quote the removal of any trees that present a potential hazard. The arborist can also recommend procedures such as cabling, bracing, crown cleaning, and fertilization to keep your trees healthy and help to mitigate the likelihood of them becoming hazards. Call us if you would like more information about tree decay or tree inspections.

Project Update: Crown Hill Cemetery Tree Preservation Planning

The program has begun with an inventory of all of the trees on the property with the assistance of a DNR grant. The Purdue University Forestry Department has identified and classified over 4,000 trees already. Vine & Branch is working with Crown Hill to plan for the long-term Tree Preservation of the property. Watch for updates and information on the state's largest Cucumber Tree (*Magnolia acuminata*, right) which we located in Crown Hill.



National Award Winning Tree Preservation

National Arborist Association
Excellence in Arboriculture 2001
Award of Distinction
for Tree Preservation During
Construction
The Orchard School Project

International Society of
Arboriculture
2002 Golf Leaf Award
for Outstanding Landscape
Beautification Activities
The Orchard School Project

National Arbor Day Foundation
2002 Building *With* Trees
Special Award for Exemplary Effort
in Residential Site Improvement
Inside & Out Ginkgo Project (right)



Vine & Branch Services

- Tree Preservation Planning
- Risk Assessment
- Plant Appraisal
- Expert Witness Services
- Project Management
- Lightning Protection
- Tree Pruning & Removal
- Cabling & Bracing
- Plant Health Care
- Landscape Architectural Services
- Landscape Installation
& Maintenance
- Landscape Lighting

Vine & Branch Arboricultural Consulting Projects

- Langston Development, Brookside - Tree Preservation Planning
- Lerchen Homes - Tree Preservation
- Gallagher Bassett Insurance Company - Plant Appraisals
- Hamilton County Courtrooms - Expert Witness
- Indianapolis Museum of Art - Tree Preservation Planning
- Indianapolis Water Company - Arboricultural Consulting
- Crown Hill Cemetery - Tree Preservation Planning
- The Orchard School - Tree Preservation
- Greg Smith & Associates - Tree Preservation
- Country Club of Indianapolis - Dispute Mediation
- Lauth Property Group - Arboricultural Consultations
- The Woods at Williams Creek - Tree Preservation
- Indianapolis Power & Light—Mediation of Client Complaint



Indianapolis Museum of Art
Tree Preservation



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