Lue's house

Lux's bedroom

natural water course to 2 oaks + others downstream

privacy issues - view from living room

flow of natural water course
to lower property's oak trees

Danny and Andrea Lux

November 8, 2007

City of Agoura Hills - Planning Commission
30001 Ladyface Court
Agoura Hills, CA 91301

RE: 06-CUP-001 Sharon Project – Hearing Date November 15, 2007

Dear Commissioners:

In addition to our comments made at the previous hearing in July the following are our current concerns.

Grading and Retaining Walls – It appears that the retaining wall at the Southeast property line was reduced 2 feet but the fill remains at 10 feet. This wall and fill combination appears to be a total of 14 feet instead of 16 feet. It would be a significant improvement to incorporate a design of the home into the existing topography thus reducing the amount of grading and filling necessary.

Please review carefully the amount of retaining walls. It appears that approximately 1/3 of the property line incorporates retaining walls. These retaining walls are 1 or 2 feet from the property line. Unfortunately these retaining walls affect and are visible to all southerly neighbors including 28245, 28241 and 28233 Balkins Drive. We can think of no other project in Old Agoura that has as much retaining wall design, 1 to 2 feet from the property line and affect all adjacent neighbors.

Lot Coverage - Secondly, we would like to address the lot coverage issue. This project far exceeds the maximum allowable lot coverage. "Restoration" of hillside does not apply to this project because the amount of disturbed area is not really restored. The "restored" area is, and remains, graded and thus disturbed in perpetuity. The additional grading for the horse keeping area adds to lot coverage bringing this project to excessive lot coverage levels unseen and unacceptable on previous projects.

Fencing - Proposed is a 6 foot "pool safety" perimeter wrought iron fence as well as an additional 2 foot "pool safety" wrought iron fence on top of the South retaining wall. The appearance is an overlapping and dense amount of iron fencing in close proximity to each other. A "guardian" type fence directly around the pool should be considered, if needed.

Landscaping - Screening for privacy has been discussed with the City Landscaping/Oak Tree Consultant to our satisfaction and we would like to incorporate her suggestions into any conditions of approval.

(Continued on page 2)

In closing, rather than reduce the project footprint in its entirety, to better conform to existing projects and the desires of the neighborhood, the project owner's solution was to simply "grade more". It is our desire to work with the applicant to come up with a better plan that reduces grading, conforms better to the topography of the hillside and reduces the excessive lot coverage.

Again we would like to reiterate that this is a hillside lot. This is an expansive project that appears to have been designed as if the lot was a flat plane, and then somehow massaged to "fit" onto this hillside. The result is much like trying to put a round peg into a square hole.

There are many unanswered issues with this project and we urge the commission to continue this project so we can get answers from the City Planning Staff as well as work with the applicant personally to find better design solutions for this project. We would also like to explore with the City the possibility of attaching road improvement requirements to this and future developments in the Fairview, Balkins and Lapworth corridor, something in the same context that road improvements requirements are currently attached to the immediate vicinity of new projects (ie. Paving or otherwise improving the road directly in front of a new home).

Thank you for your consideration,

Danny Lux

Andrea Lux

Danny and Andrea Lux

Novemebr 8, 2007

City Of Agoura Hills
Planning Department and Commission
30001 Ladyface Court
Agoura Hills, CA 91301

In addition to our letter we are concerned with the following:

Drainage from the Sharon project as it relates to our property.

Slippage of pool/residence particularly that which is on fill.

Fill and the number of trucks that will import.

Erosion from the Sharon project as it relates to our property.

Runoff and irrigation runoff from the Sharon property and its potential effect on our property.

The ability of the South and East swale to capture runoff and its potential failure either from design or neglect.

Preservation of our existing fence in it's entirety including the post footings.

Preservation and maintenance of the existing pine tree.

Construction parking/traffic/noise.

Construction debris and the proper disposal thereof.

Spillover from grading or excavating.

Runoff/drainage that may impact our septic system located just East of the pine tree.

Color and maintenance of proposed retaining walls.

Maintenance of the existing natural vegetation to the North of the Sharon Property according to fire department regulations.

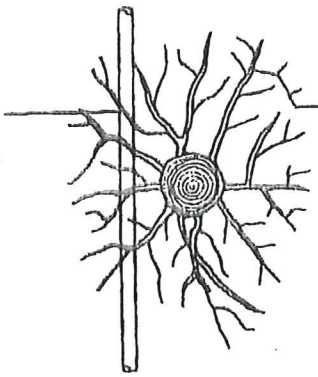
Sincerely,

Andrea Lux

Andrea Lux

Danny Lux

28233 Balkins Dr • Agoura Hills, CA 91301



CHAPTER 13
TREES AND CONSTRUCTION

Objectives

1. Describe how trees can be injured or killed as the direct result of construction damage.
2. Discuss the importance of arborists' participation in the planning stages of development if trees are to be a part of the landscape.
3. Explain the steps that can be taken to preserve trees on a construction site.
4. Discuss some techniques that can be used to preserve trees when the soil grade must be changed.
5. Explain the limitations for treatment of trees that have been damaged by construction.

Key Terms

access route
aeration system
air excavator
bark tracing
barriers
radial trenching
soil compaction
specifications
terracing
tree island
tree well
trenching
tunneling
vertical mulching

INTRODUCTION

Construction damage is one of the most common causes of tree death and decline in urban areas. As cities and suburbs expand, wooded lands are being developed into commercial and residential sites. Buildings are erected in the midst of trees to take advantage of the aesthetic value of the wooded lots. Unfortunately, if proper steps are not taken to ensure their survival, many of the trees will be lost in subsequent years.

It is possible to preserve trees on building sites if the right measures are taken. The most important step is to be sure that the professional arborist gets involved early—during the planning stage. An arborist can help decide which trees are suitable for saving and can work with the builder to protect trees throughout each phase of construction. Understanding how to minimize construction injury is based on knowledge of tree physiology and the components needed for tree health, as well as understanding construction practices.

HOW TREES ARE DAMAGED DURING CONSTRUCTION

The processes involved with construction can be deadly to nearby trees. Further, unless the damage is extreme, the trees may not die immediately, but could decline over several years. With this delay in symptom development, the loss of the tree may not be associated with the construction.

When construction equipment such as backhoes, bulldozers, and cranes are operated near trees, the trees are likely to be damaged. Branches can be broken or split. Often, tree trunks are seriously wounded. Pruning cuts made by untrained construction workers may form wounds that never close on a weakened tree (Figure 13.1).

The most serious damage to trees caused by construction is underground. The root system of a tree growing in a wooded area may spread a distance much greater than the height of the tree. Generally, the fine, absorbing roots are concentrated in the upper few inches of soil (Figure 13.2). These roots can easily

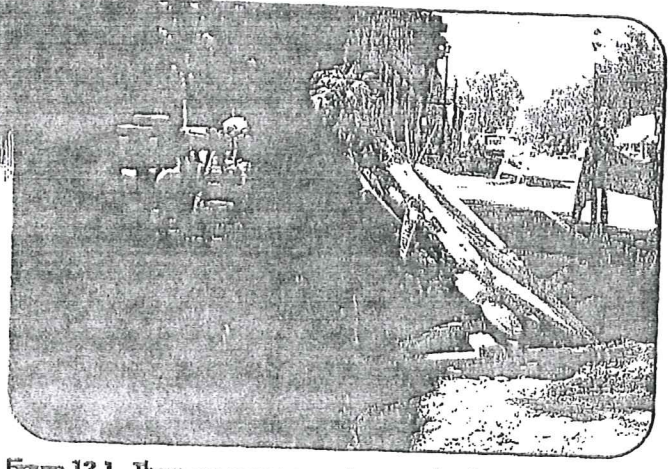


Figure 13.1 There are many ways trees can be damaged during construction. Successful tree preservation begins at the planning stage to avoid scenarios such as this one.

be damaged or killed by construction equipment. When tree roots are removed or damaged due to construction activity, the trees may show decline symptoms within a few months, or the symptoms may not appear for a few years. Symptoms may include small or yellow leaves, premature fall color, extensive watersprout development on the trunk and main limbs, dead twigs, and, eventually, major branches may die.

Physical Injury to Trunk and Crown

Construction equipment can injure the aboveground portion of a tree by breaking branches, tearing the bark, and wounding the trunk. These injuries are permanent, even if they are compartmentalized. If the injuries are extensive and the tree is stressed, the tree may never recover.

Cutting of Roots

The digging and **trenching** necessary to construct a building and install underground utilities will likely sever a portion of the roots of many trees in the area.

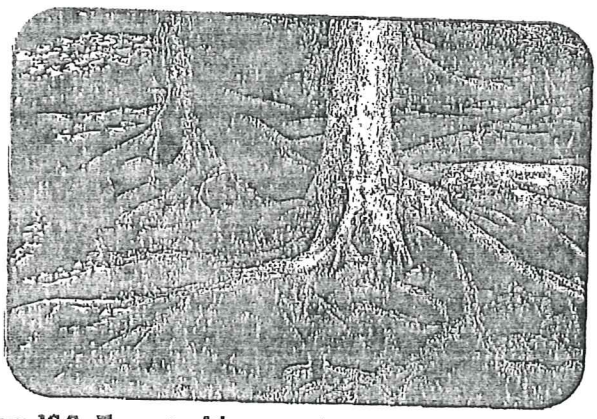


Figure 13.2 The roots of these trees have been exposed, showing just how shallow they are. Knowing this helps the arborist understand why compaction or grade increases can be so damaging to trees.

If the grade is lowered near a tree, a large percentage of the root system may be removed. With an understanding of where roots grow, it is easy to appreciate the potential for damage. The roots of a mature tree can extend far from the trunk of the tree. In fact, roots typically will be found growing a distance of one to three times the spread of the branches. The amount of damage a tree suffers from root loss depends, in part, on how close to the tree the cut is made. Severing one major root can cause the loss of 15 to 25 percent of the root system.

Another problem that may result from root loss due to digging and trenching is an increased potential for trees to fall over. Roots play a critical role in anchoring a tree. If the major support roots are cut on one or more sides of a tree, the tree may fall or blow over (Figures 13.3 and 13.4).

Soil Compaction

An ideal soil for root growth and development is about 50 percent pore space. These pores, the spaces

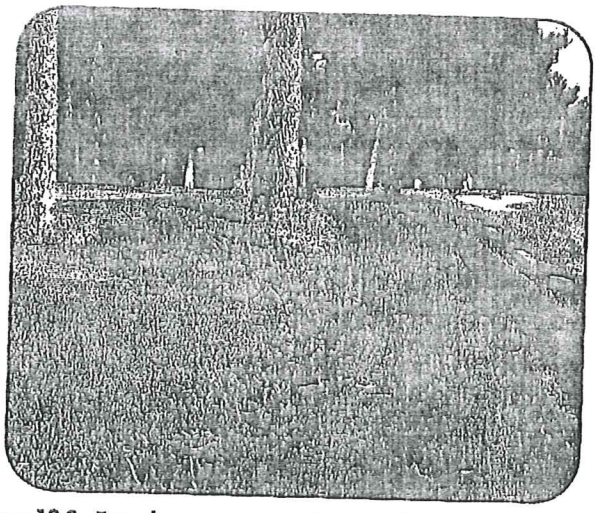


Figure 13.3 Even the construction of a path close to trees can sever a large percentage of the roots.

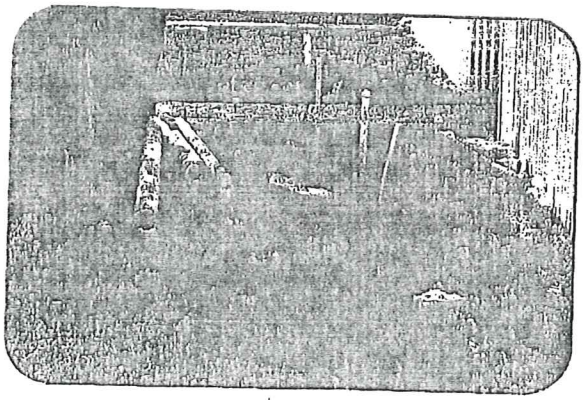


Figure 13.4 The installation of utilities in this trench followed the clearing of the site, grading, and sidewalk installation. The accumulated injuries will soon be apparent as the tree begins to decline.

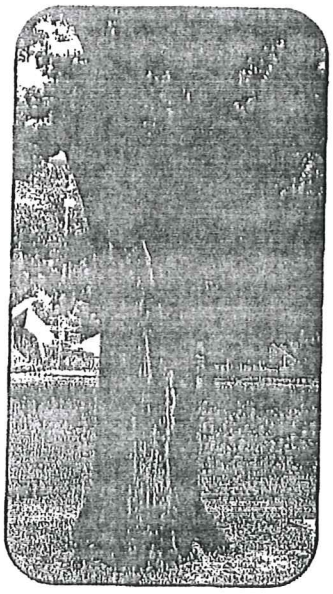


Figure 13.5 This tree, located on a college campus, is in an advanced stage of decline from soil compaction, installation of the path, and construction injuries to the trunk.

between soil particles, are filled with water and air. **Soil compaction** can be devastating to trees. When soil is compacted, the pore space between soil particles is greatly reduced. This reduces oxygen availability to roots and causes accumulation of carbon dioxide and other gases. Root growth may be diminished, and the ability to absorb water and minerals decreased. Soil compaction reduces water infiltration and movement, and impairs drainage. The ability of roots to grow and expand into compacted soils is also reduced (Figure 13.5).

Smothering Roots by Adding Soil

Most people are surprised to learn that 90 percent of the fine roots that absorb water and minerals are in the upper few inches of soil. Roots require space, air, and water. Roots grow best where these requirements are met, which is usually very near the soil surface. Piling soil over the root system or increasing the grade smothers the roots. It takes only a few inches of added soil to kill a sensitive, mature tree. Even if the grade change is not in the immediate vicinity of the root zone, the water table or drainage pattern could be affected, which can adversely impact trees.

Exposure to the Elements

Trees in a forest grow as a community, protecting each other from the elements. The trees grow tall, with long, straight trunks and high canopies. Removal of neighboring trees, or opening the shared canopies of trees, exposes the remaining trees to sunlight and wind. The higher levels of sunlight may cause sunscald on the trunks and branches of trees with thin bark. Most forest trees have long, thin trunks, with little taper. If neighboring trees that helped provide protection for many years are removed, the remaining trees will be more prone to breaking from wind or ice loading (Figure 13.6).

To fully understand the effects of construction on trees requires comprehension of the biological needs and growth processes of trees, both as individual specimens and in groups or forests. Every aspect of tree health, growth, structure, and development can be affected. The impacts of construction are cumulative and can send a tree into a spiral of decline that might not even be recognized by the untrained eye until it is far too late. This fact underscores the need to involve a professional arborist early in the planning stages.

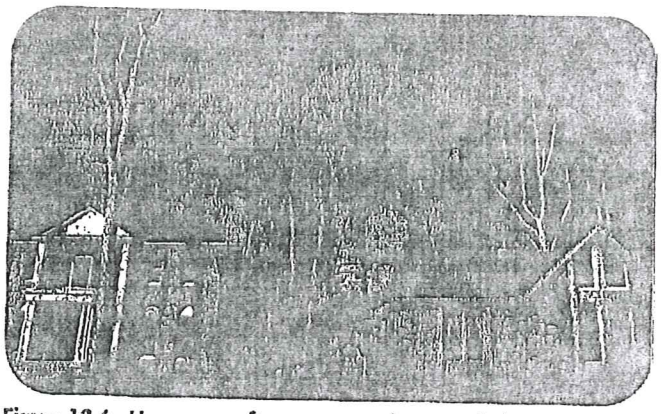


Figure 13.6 Homes are often constructed on wooded sites, and the lots can be valued at thousands of dollars more than sites without trees. However, unless measures are taken to conserve the trees, they are likely to die following construction.

PLANNING AND PRESERVATION

If trees are to be preserved on construction sites, their consideration cannot wait until the construction begins. In fact, the earlier in the process that an arborist becomes involved, the greater the chances of success.

Unfortunately, in the past, arborists were rarely involved in the development process. Arborists are now becoming a more integral part of the process, however. Arborists must learn to communicate and work with other professionals such as developers, planners, city engineers, and builders. Many levels of planning and development are involved with building a residential home; these levels are multiplied many times over for a complex city development. Standards and **specifications** exist for design and construction of buildings, installation of utilities, building roads and other paved surfaces, and every other aspect of development. Few professionals in these areas of specialization have any appreciation for the requirements of trees. If arborists can become a part of the development team, the needs of any trees existing on the site or to be planted later can be considered in the early stages of planning. If success is to be achieved, though, it will require the commitment of everyone involved, at each level of development.

One objective of development should be to satisfy all of the requirements of construction with minimal

impact to trees that are to remain on site. The arborist must work with the builder and developers to determine which trees are to be preserved and which should be removed. It will probably not be practical, or even desirable, to save every tree. The decision must consider the species, size and maturity, location, and the condition of each tree. The arborist should evaluate each tree's condition and suitability for saving. Only healthy, structurally sound trees should be preserved. In addition, it is necessary to take into account the trees' tolerance for construction processes. The largest, most mature trees are not always the best choices to conserve. Younger, more vigorous trees can usually survive and better adapt to the stresses of construction. Try to maintain diversity of species and tree maturity.

An arborist should be involved in evaluating, selecting, and mapping trees worthy of consideration for preservation on a site. Trees should be considered along with all other landscape features (for example, wetlands, streams, and wildlife habitats) during the preliminary design phase. The arborist should prepare—often with the help of a landscape architect—a plan that details the location of trees and other features in relation to the buildings, roads, and infrastructure. This plan should show preservation zones and details of all mitigation and preservation measures for the project (Figure 13.7).

Sometimes design plans or construction procedures can be modified to better accommodate trees. Small changes in the placement or design of a building can make a great difference in whether a critical tree will survive. An alternative plan may be more friendly to the root system. For example, bridging over the roots may substitute for a conventional walkway. Or, instead of trenching beside a tree for utility installation, **tunneling** under the root system is much less damaging (Figure 13.8).

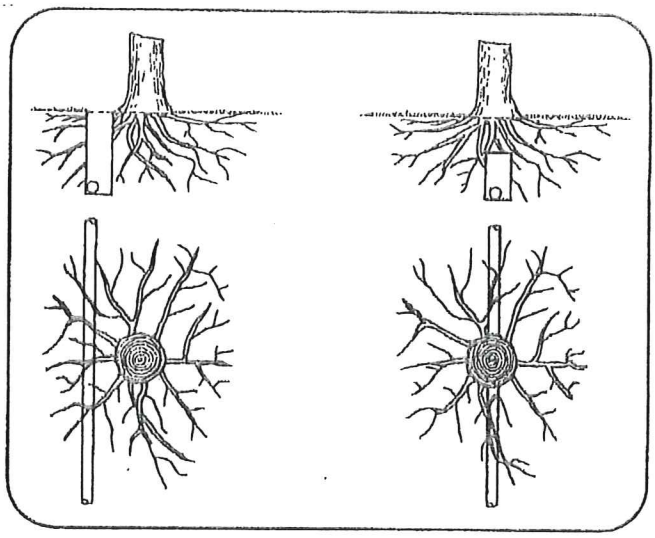


Figure 13.8 Excavation for utilities. Less damage is done to the root system if utilities are tunneled under a tree rather than across the roots.

Specifications

Get it in writing. All of the measures intended to protect trees must be written into construction specifications. The written specifications should detail exactly what can and cannot be done to and around the trees. Each subcontractor must understand the purpose of the **barriers**, limitations, and specified work zones. It is a good idea to post signs as a reminder.

Fines and penalties for violations should be built into the specifications. Not too surprisingly, subcontractors are much more likely to adhere to tree preservation clauses if their profit is at stake. The severity of the fines should be proportional to the potential damage to the trees and should increase for multiple infractions.

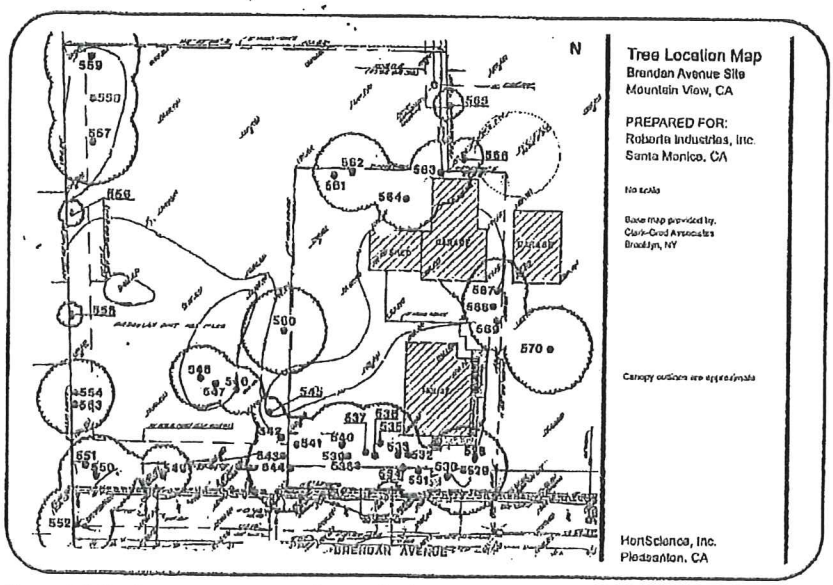


Figure 13.7 A tree survey map depicts the location of individual trees (often referencing tree tag numbers) and their canopy outlines. A topographic plan is generally used as a base map.

AVOIDING TREE DAMAGE DURING CONSTRUCTION

After all the plans have been made, the design plans finished, and the tree assessments completed, it will be time to implement measures for tree preservation on the construction site. Because arborists' ability to repair construction damage to trees is limited, it is vital that the trees be protected from injury.

Erecting Barriers

The single most important action that can be taken at the start of the construction process is to set up construction fences around all of the trees that are to remain. The fences should be placed as far out from the trunks of the trees as possible. As a general guideline, allow 1 foot of diameter from the trunk for each inch of trunk diameter. The intent is not merely to protect the aboveground portions of the trees but also the root systems. Remember that root systems can extend much farther out than the branches of trees (Figure 13.9).

Instruct construction personnel to keep the fenced area clear of building materials, waste, and excess soil. No digging, trenching, compaction, or other soil disturbance should be allowed in the fenced area.

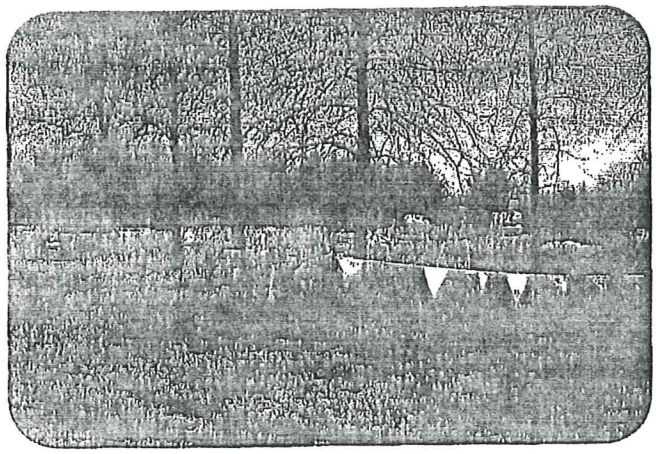


Figure 13.9 These trees have been roped off to designate that they are to be preserved. Protective fences or barriers would be more effective—and should be placed much farther out from the trees to protect the root systems.

Limiting Access

If at all possible, it is best to allow only one **access route** on and off the property. All contractors must be instructed as to where they are permitted to drive and park their vehicles. Often this same access drive will later serve as the route for utility wires, waterlines, the driveway, or other paved surfaces.

Limit storage areas for equipment, soil, and construction materials. Specify areas for burning (if permitted), cement washout pits, and construction work zones. These areas should be away from protected trees.

Reducing Compaction

One technique to reduce compaction on construction sites is to spread a thick layer of mulch, such as wood chips readily available to arborists. The mulch should be 6 to12 inches deep. This has the effect of dispersing the weight of construction equipment. Additional weight dispersal can be obtained by placing large plywood sheets over the mulch. Construction mulching is a temporary measure, and the mulch cannot be left in place at that thickness for a prolonged period of time. The mulch must be removed carefully so as not to damage the trees in the process. An alternative is to spread the mulch, dispersing it to a layer of 2 to 4 inches in depth.

Changes in Grade

Grade changes can be devastating to trees, even if the change is not severe. If the grade must be lowered, the ability of a tree to survive depends on several factors. The most important is the amount of root system that will be cut away. Other important considerations are the tree species, the degree to which the grade must be lowered, the soil conditions, and whether the area is to be paved. If the grade must be lowered near a tree, **terracing** may help preserve some of the roots. The original grade should be maintained as far out from the trunk as possible. Terraces can be formed to lower the grade in steps. At each level, the roots should be severed cleanly and kept moist. If walls are installed at the level changes, they must allow for drainage. Sand is sometimes used as a backfill behind the walls to encourage new root growth.

If the grade must be lowered completely around a tree, a **tree island** can be constructed. Obviously, the greater the percentage of root system that remains at the original grade, the greater the chance of tree survival. The techniques used for creating a tree island are similar to those used in terracing (Figure 13.10).

If the grade is raised, the roots may be suffocated. As little as 4 inches of soil placed over the root system can kill some species. Increases in grade may require major steps to protect the tree. Sometimes **aeration systems** are installed to preserve trees, and designs of complex aeration systems and **tree wells** are described in various texts. There is little research, however, to confirm the value of these systems. Very large tree wells may keep soil fill far from tree trunks and minimize the percentage of the root system covered. Small-diameter wells built around the trunks of trees are rarely adequate to provide enough oxygen to keep trees alive.

Some specifications call for use of gravel or stone below the fill dirt to increase water and oxygen penetration. However, if soil is placed over gravel, water will not drain out of the soil layer until the saturation point is reached. If fill soil is placed in direct contact with the original grade soil, water penetration will be

improved, and conditions will be more favorable for root penetration and development in the added fill soil.

Measures taken to preserve trees on a construction site, such as tree well construction, can be very expensive and involved, and there is no guarantee of success. Consideration must be given to the tree size and species, drainage pattern, soil conditions, depth of fill, and future irrigation and maintenance plans before a well is constructed. Recommendations should be based on realistic expectations for tree survival.

Maintaining Good Communications

It is important to work together as a team. The best-laid plans between arborist and builder can be destroyed by one uninformed subcontractor. The consulting arborist should visit the site at least once a day if possible. Vigilance will pay off as workers learn to take your wishes seriously. It is a good idea to take photos at every stage of construction. If any infraction of the specifications does occur, it may be important to link cause and effect.

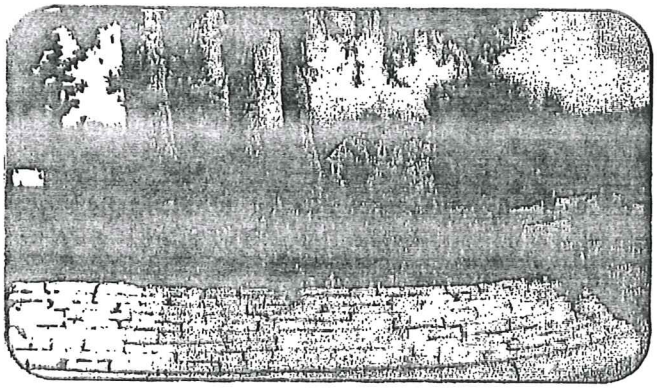


Figure 13.10 Tree islands can be constructed to preserve trees on a construction site.

Final Stages

It is not unusual to go to great lengths to preserve trees during construction, only to have them injured during landscaping. Installing irrigation systems and rototilling planting beds are two ways the root systems of trees can be damaged. Careful planning and communicating with landscape designers and contractors is just as important as avoiding tree damage during construction.

Post-Construction Tree Maintenance

Trees on a construction site require several years to adjust to the injury and environmental changes that occur during construction. Stressed trees are more prone to health problems such as disease and insect infestations. Plan for continued maintenance, and monitor the trees' health, structure, and overall vitality.

Despite the best intentions and most stringent tree protection measures, some trees may still be injured by the construction process. There are remedial treatments that an arborist can use to help reduce stress and improve the growing conditions around the trees, but these treatments are few. Unfortunately, the ability to restore trees damaged by construction is very limited, and this is why the emphasis should be placed on protection.

TREATMENT OF TREES DAMAGED BY CONSTRUCTION

Inspection and Assessment

Because construction damage can affect the structure and stability of a tree, it is important to check for potential hazards. This may involve a visual inspection, or instruments may be used to check for the presence of decay. Sometimes a hazard can be reduced or eliminated by removing an unsafe limb, pruning to reduce weight, or installing cables or braces to provide structural support. An often-overlooked method of reducing hazards is to move objects that could be hit, or to limit access to the hazardous area. If there is doubt about the structural integrity of a tree or the risk cannot be adequately reduced, the tree should be removed. Although the goal is to preserve trees whenever possible, that goal must not supersede any question of safety.

Treating Trunk and Crown Injuries

Pruning

Branches that are split, torn, or broken will probably need to be removed. In addition, any dead, diseased, or rubbing limbs should be removed. Sometimes it is necessary to remove some lower limbs to raise the canopy of a tree and provide clearance below. It is best to postpone other maintenance pruning for a few years.

Old recommendations suggest that tree canopies should be thinned or topped to compensate for root loss. There is no conclusive research to support this practice. Thinning the crown can reduce the tree's food-making capability and may stress the tree further. It is better to limit pruning in the first few years to hazard reduction and the removal of deadwood, especially in large, mature trees.

Cabling and Bracing

Trees growing in wooded areas are usually not a threat to people or structures. Trees close to houses or other buildings must be maintained to keep them from injuring people or damaging property. If branches or tree trunks need additional support, risk of failure

may be reduced with the installation of cables or bracing rods. If cables or braces are installed, however, 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.

Repairing Damaged Bark and Trunk Wounds

Often the bark may be damaged along the trunk or major limbs. If this happens, the loose bark should be carefully removed. Jagged edges can be cut away with a sharp knife, taking care not to cut into living tissues. This procedure is called **bark tracing.**

Wound Dressings

Wound dressings were once thought to accelerate wound closure and reduce decay. Research has not substantiated this, however. Some studies have shown beneficial effects in specific cases in reducing borer attack, oak wilt infection, or control of sprout production or mistletoe. However, wound dressings are primarily used for cosmetic purposes, and are neither required nor recommended in most cases. If a dressing must be applied, only a light coating of a nonphytotoxic material should be used.

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. If there is a drainage problem, the trees will decline rapidly. This problem must be corrected if the trees are to be saved. If soil drainage is good, be sure to keep the trees well watered, especially during the dry summer months. A long, slow soak over the entire root zone is the preferred method of watering. Frequent, shallow waterings should be avoided, and water should not be directed at or near the trunks of trees.

Mulching

One of the simplest and least expensive things that can be done for trees may also be one of the most effective. Applying a 2- to 4-inch layer of an organic mulch such as wood chips, shredded bark, or pine needles over the root system of a tree can enhance 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 is practical for the landscape site. When it comes to mulch, deeper is not better, and piling it up against the trunk can lead to disease problems.

Aeration of the Root Zone

Compaction of the soil and increases in grade both deplete the oxygen supply to tree roots. If soil aeration can be improved, root growth and water uptake can be enhanced. Vertical mulching and radial trenching are techniques that may improve conditions for root growth. If construction-damaged trees are to survive the injuries and stresses they have suffered, they must replace the roots that have been lost. Research to date on improving aeration has been limited, and there is still some question how successful attempts at improving aeration have been (Figure 13.11).

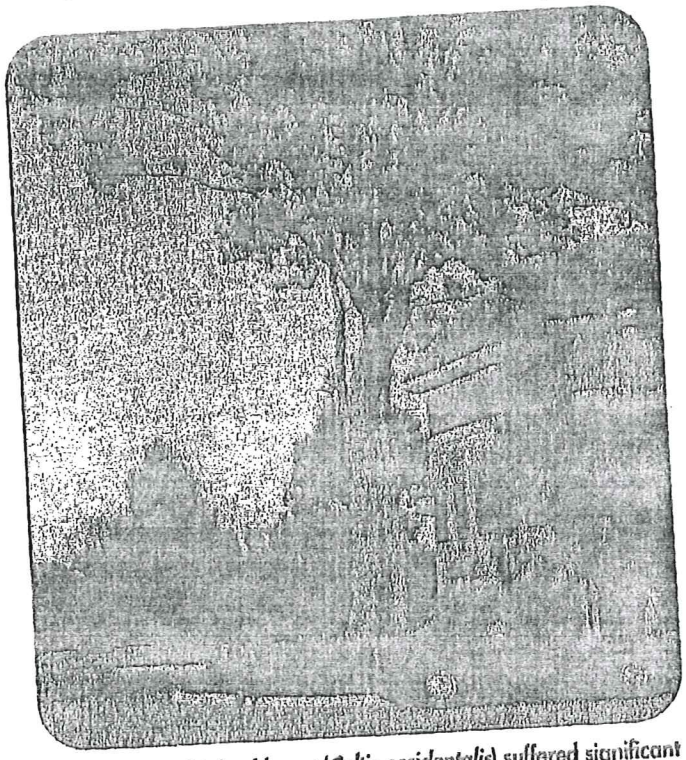


Figure 13.11 This hackberry (*Celtis occidentalis*) suffered significant root loss from construction. Efforts were made to preserve the tree, and arborists have removed some of the deadwood that resulted from construction. The root area has been aerated, and the health of the tree is being monitored.

Drilling Holes/Vertical Mulching

The most common method of aeration of the root zone involves drilling holes in the ground. Holes are usually 2 to 4 inches in diameter and are made about 1 to 3 feet on center, throughout the root zone of the tree. The depth should be at least 12 inches but may need to be deeper if the soil grade has been raised. Sometimes the holes are filled with organic material such as compost, peat moss, or other materials that maintain aeration and support root growth. This is called **vertical mulching.**

Radial Trenching

Another method of aeration is **radial trenching**. Trenches are dug in a radial pattern throughout the root zone. The trenches appear similar to the spokes of a wagon wheel. If a mechanical trencher is used, it is important to begin the trenches 4 to 8 feet from the trunk of the tree to avoid cutting any major support roots. The trenches should extend at least as far as the drip line of the tree. Use of an **air excavator** has proved very effective for this purpose. While mechanical trench digging sacrifices some roots, air excavation devices do little damage to roots, even if trenching is not radial. If the primary goal is to reduce compaction, the trenches should be about 1 foot in depth. They may need to be deeper if the soil grade has been raised.

The narrow trenches are backfilled with native soil and compost. Root growth will be greater in the trenched area than in the surrounding soil. This can give the tree the added boost it needs to adapt to the compacted soil or new grade.

What About Fertilization?

Most experts recommend that trees not be fertilized the first year after construction damage because water and mineral uptake may be reduced due to root damage. If fertilizer is applied, however, slowly soluble mineral sources should be used to minimize the potential for root injury. All fertilizers release mineral salts in soil water, which are absorbed by roots. Soluble sources of fertilizer can lead to excessive soil salts, which can draw water out of the roots and into the soil. In addition, soluble nitrogen fertilization may stimulate top growth at the expense of root growth, particularly if root growth is suppressed. It is a common misconception that applying fertilizer gives a stressed tree a much-needed shot in the arm. Fertilization should be based on the nutritional needs of trees. If essential elements are deficient, supplemental fertilization may be indicated. It is advisable to keep application rates low, however, until the root system has had time to adjust.

Monitoring for Decline and Hazards

Despite everybody's best efforts, some trees may be lost as a result of land development and construction activities. If a tree dies as a result of root damage, it may be an immediate hazard and may require immediate removal. Trees may appear to recover from construction damage but may have extensive root rot. Arborists must inspect and monitor trees that have suffered construction stresses for signs of possible hazards. Look for cracks in the trunk, split or broken branches, and dead limbs. Watch for indications of internal decay such as cavities, carpenter ants, soft wood, and mushroomlike structures growing on the trunk, root collar, or along the major roots. Trees should also be inspected for signs of insects or diseases. Stressed trees are more prone to attack by certain pests.