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**Southern Ridge Development
Builders and Homeowners
Tree Protection Planning and Guidelines**

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TREE PROTECTION PLANNING

The Tree Preservation Plan (TPP) provides the strategy for conducting the construction project in a way that allows those trees designated for preservation to continue healthy growth for years after the project's completion.

The following guiding principles adapted from the International Society of Arboriculture publication Trees and Development, A Technical Guide To Preservation of Trees During Land Development by Methany and Clark (1998) summarize the required approach to a successful tree protection effort:

1. Preservation requires the serious commitment of all parties including developer, general contractor, subcontractors, utility providers, city regulators, owners and consultants.
2. Preservation requires an accurate understanding of tree growth and development. For example, it is important to know that the majority of roots are in the first one foot of soil and that oak wilt can enter a tree through untimely pruning wounds.
3. Preservation must begin at the earliest stages of planning.
4. Not all trees can or should be saved. Those with defects or unsolvable location conflicts should be considered for removal.
5. Preservation focuses on avoiding injury to trees. Once a tree has been damaged even the most competent arborist is limited in finding solutions.
6. Construction impacts are accumulative. Trees have some degree of tolerance for injury but will die as readily from a dozen small injuries as one large one.
7. Good communication between the designated tree consultant, designers, builders and owners is essential.
8. Accurate site information is critical to make useful decisions. One must know not just tree and building location but also grade change, utility trenching, construction equipment access lanes, etc.
9. Tree protection requires adequate space for the trees to survive.

The TPP strategy addresses four distinct stages of the development process as follows:

1. **Planning - Design** is influenced by tree facts such as location, species and condition. Data is gathered in the field and compiled in a tree resource inventory. Impact evaluation is conducted using the available data.
2. **Pre-construction preparation** - Includes clearance pruning and tree health enhancement, removal of select trees as needed, determination of a tree protection zone and placement of fencing or soil protectors.
3. **Construction** - Assignment of tree protection responsibilities to the project superintendent and a strong on site presence of the consulting arborist or a

designated responsible person and good relationships with the construction crews is essential to assure that the contractor is enforcing the TPP. Accidents and unforeseen circumstances must be addressed quickly. Documentation is accomplished through a journal and photographs.

4. Post-construction maintenance – Even in the best-case scenario most trees will have been impacted either directly by injury or indirectly through changed environment. The owners will minimally need to guard against opportunistic pests and provide a higher level of water and nutrient monitoring during the trees' adjustment period.

GUIDELINES FOR TREE PROTECTION DURING CONSTRUCTION

1. A protected root zone (PRZ) must be established for all trees designated for preservation to protect the critical roots. The radius of the PRZ area around the tree is 12-18 times the tree trunk diameter measured at 4.5 feet above the ground. For example, a 12" trunk diameter tree will have a 12' -18' PRZ radius.
2. A sturdy, rigid temporary fence must be erected and maintained throughout the construction process to isolate the PRZ from construction work.
3. Avoid soil or equipment storage, compaction, dumping, digging or any grade change in the PRZ. Cover the PRZ with 3-5" of shredded bark mulch to maintain moisture and control weeds.
4. Avoid utility trenching in the PRZ, tunnelling under the roots if necessary.
5. Any roots that must be severed within the PRZs must be cut with sharp, clean root cutting tools avoiding any ripping or tearing.
6. Any oaks on the site must be protected against oak wilt infection. Avoid oak pruning or wounding from April 15 to October 1. If a wound is accidentally made, an asphalt base tree wound dressing will be immediately applied. Two cans of this material will be kept on site during construction. Detailed information on oak wilt is available from the University of Wisconsin Extension Bulletin No. G3590 titled, "Oak Wilt Management – What Are the Options?" (1993)
7. Either a consulting arborist or a designated responsible person from the construction staff will provide verification that the terms of the tree protection plan are met. Documentation will be generated by a written journal and photographs of the tree protection plan enforcement during the complete construction process.

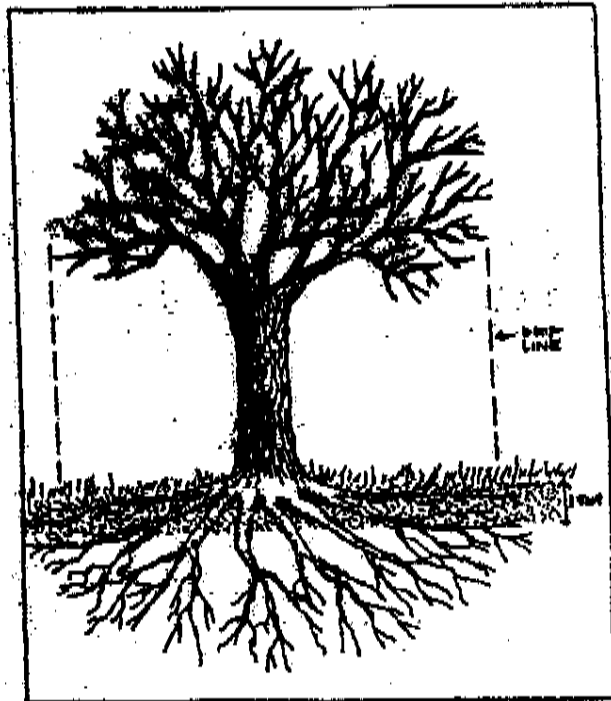
WORK WITH BUILDER TO AVOID DAMAGE

Most of a tree's feeder root system is within the top foot of soil. In fact, many roots grow in the organic litter that has accumulated under the tree. The root system extends at least as far (often farther) than the ends of the branches. Remember mature trees have been growing in the same place for many years. The tree developed roots at a soil depth optimum for absorbing the nutrients, moisture and oxygen that are necessary for the growth and survival of the tree. If the root zone is disturbed by adding fill, cutting away soil or moving heavy equipment over the root zone, the tree is almost sure to suffer.

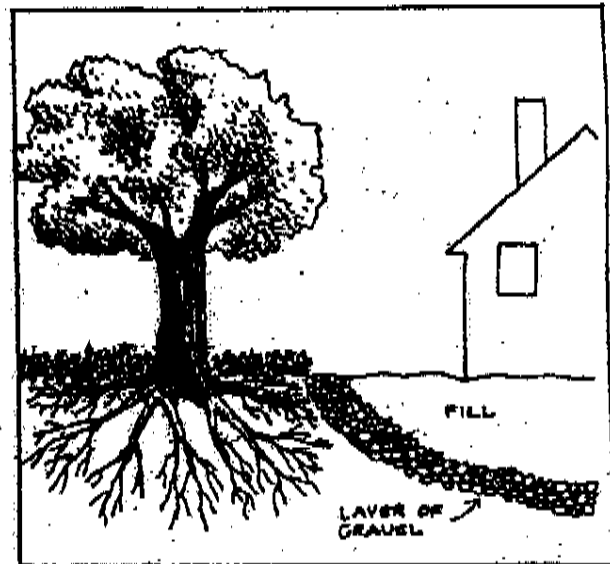
One of the most common (and most destructive) causes of construction damage to mature trees is to add soil, thereby burying the roots. When this happens, the roots lose their supply of oxygen and water. If you must add soil fill around the tree, use a porous soil, like a sandy loam, that will let the roots "breathe." Or, put a layer of gravel (not crushed limestone) over the root zone before adding soil. Small, circular pits dug around trees to keep soil fill away from the base of the trunk seldom preserve trees, because the soil fill outside the well covers the major portion of the fine root system. Avoid stockpiling topsoil or construction materials around trees during construction. On the other hand, removing topsoil during home construction will damage the feeder roots. Without their protective soil coverings, the roots are subject to drying and injury.

Ask your contractor to keep heavy equipment away from the trees. Build a fence around the root zone if necessary. Broken branches, torn bark and crushed roots not only hurt the tree, but make it more open to disease and insect invasion. Driving heavy equipment near trees will compact soil and damage the roots. Before construction begins, you may want to cover the root area with several inches of wood chips to minimize compaction.

If at all practical, preserve the natural habitat of the tree, both during and after construction. For example, oak trees thrive in acid soils. Their fallen leaves help create and maintain acidic surface layers of soil that differ significantly from the alkaline material below. If you clear away the natural undergrowth, establish a lawn and rake up the leaves each fall, you will eventually change the upper soil surface, and the oaks will decline and possibly die. Try to maintain the natural drainage pattern of the site. When grading changes the underground flow of water that the tree is accustomed to, the tree will suffer.



The tree's feeder roots grow in the top foot of soil and often extend as far or farther than the ends of the branches.



If fill must be placed over tree roots, put a layer of gravel over the roots before adding fill. This allows water and oxygen to get to the roots.