



# Structure Pruning

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A guide to promoting a healthy canopy

# The Right Tool for the Right Job

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- Selecting the right tool can help you avoid making improper cuts while pruning.
- Keep cutting tools sharp and maintained. Most accidents occur because of dull blades and dim wits.
- Proper PPE should always be worn while pruning. Make informed decisions as to the level of protection needed.

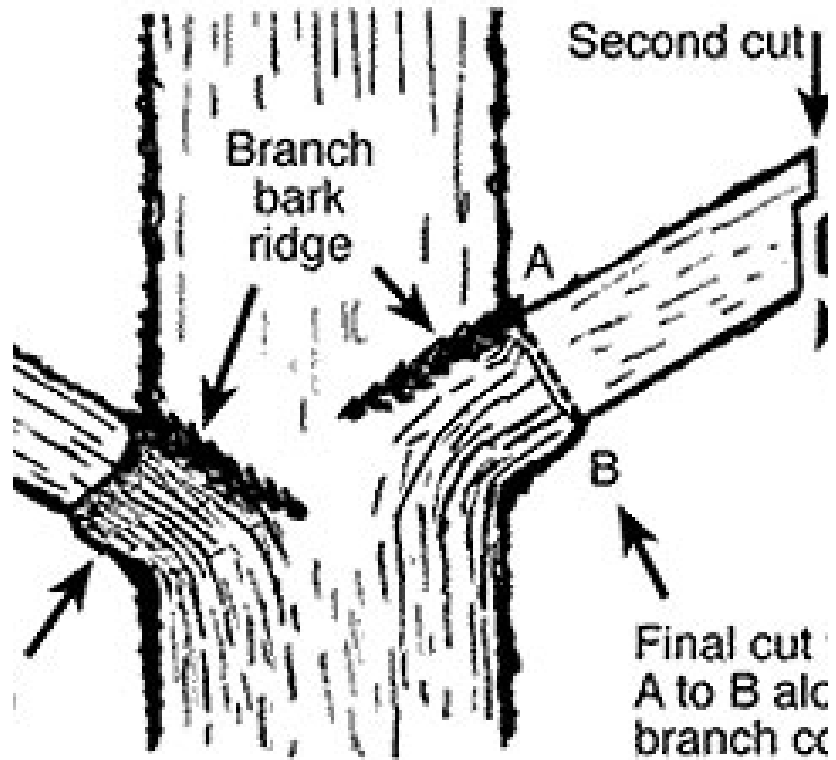


# Making Proper Pruning Cuts

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# Where to Cut?



- Make a snap cut on longer branches to avoid having the bark peel back to the trunk.
- Locate the Branch Bark Collar
- Cuts made flush against the trunk will damage the Branch Collar, thus reducing the chances for compartmentalization.
- If the Collar cannot be recognized, cut at a 45 degree angle away from the trunk starting at A on the diagram.

# Essential Components

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**The essential components of structural pruning are:**

- Develop and maintain a dominant central leader
- Identify the lowest branch in what will become the permanent crown
- Prevent branches below the permanent crown (temporary branches) from growing larger than half the trunk diameter
- Space main branches along the central leader by removing or shortening others over time
- Reduce vigorous upright branches and stems back to lateral branches or remove them.

## Choosing a Dominant Central Leader

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- Identify the upright stem that will make the best leader and trunk. It should be among the largest in diameter and in the center of the crown, and under ideal conditions it should be free of cracks, openings, mechanical damage, large pruning wounds, inclusions, cankers, or other defects that could compromise its strength. The largest diameter stem should be chosen as the leader where practical, but it does not have to be straight.
- Identify the branches that are competing with this stem (i.e., those with a large aspect ratio).
- Remove competing or interfering branches back to the trunk or slow them down with a reduction cut, or use a combination of both. Remove or reduce branches that are clustered together and growing from the same point on the trunk.

# Temporary versus Permanent Scaffold Branches

- 1. Determine the height of the lowest permanent branch based on clearance requirements for site use.
- 2. Select branches on the trunk of weak to moderate vigor to remain as temporary branches.
- 3. Remove vigorous, larger-diameter, low-growing laterals if less-vigorous, smaller-diameter ones can be selected. Short, horizontal, and small-diameter temporary branches can be left unpruned.
- 4. If there are not enough low-vigor branches to shade the trunk, more-vigorous branches can be selected and pruned to remove 50% or more of the branch. This subordination treatment will slow growth of the branch, which will minimize the pruning cut size when the temporary branch is eventually removed.
- 5. As the tree grows taller, remove temporary branches over a period of a few to several years, starting with those that are largest in diameter. When large-diameter temporary branches

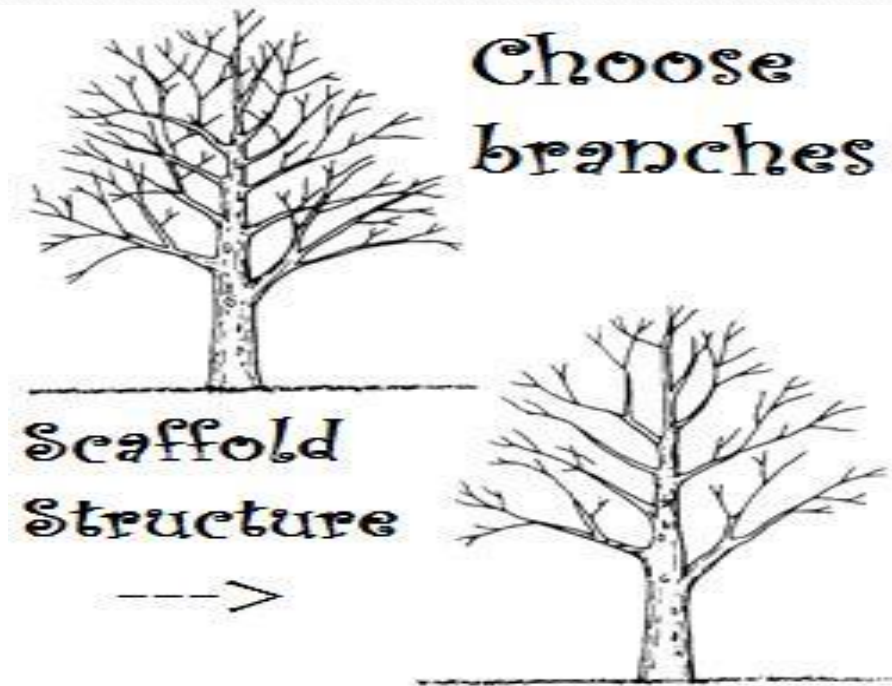
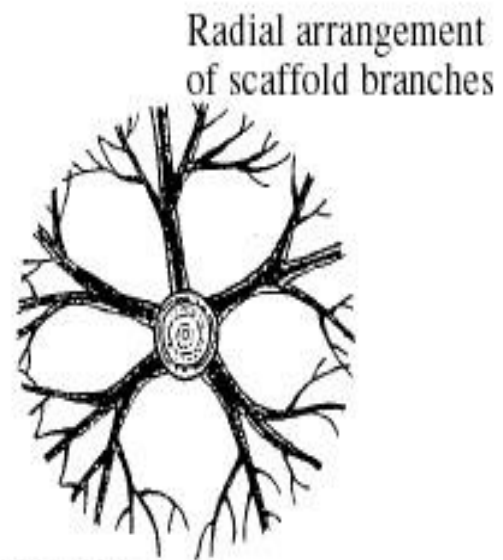
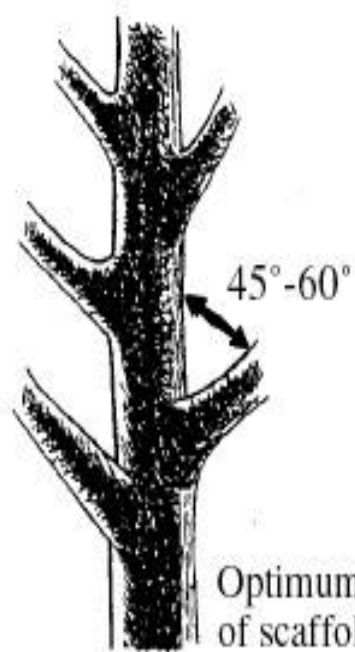
# Reduction Cuts

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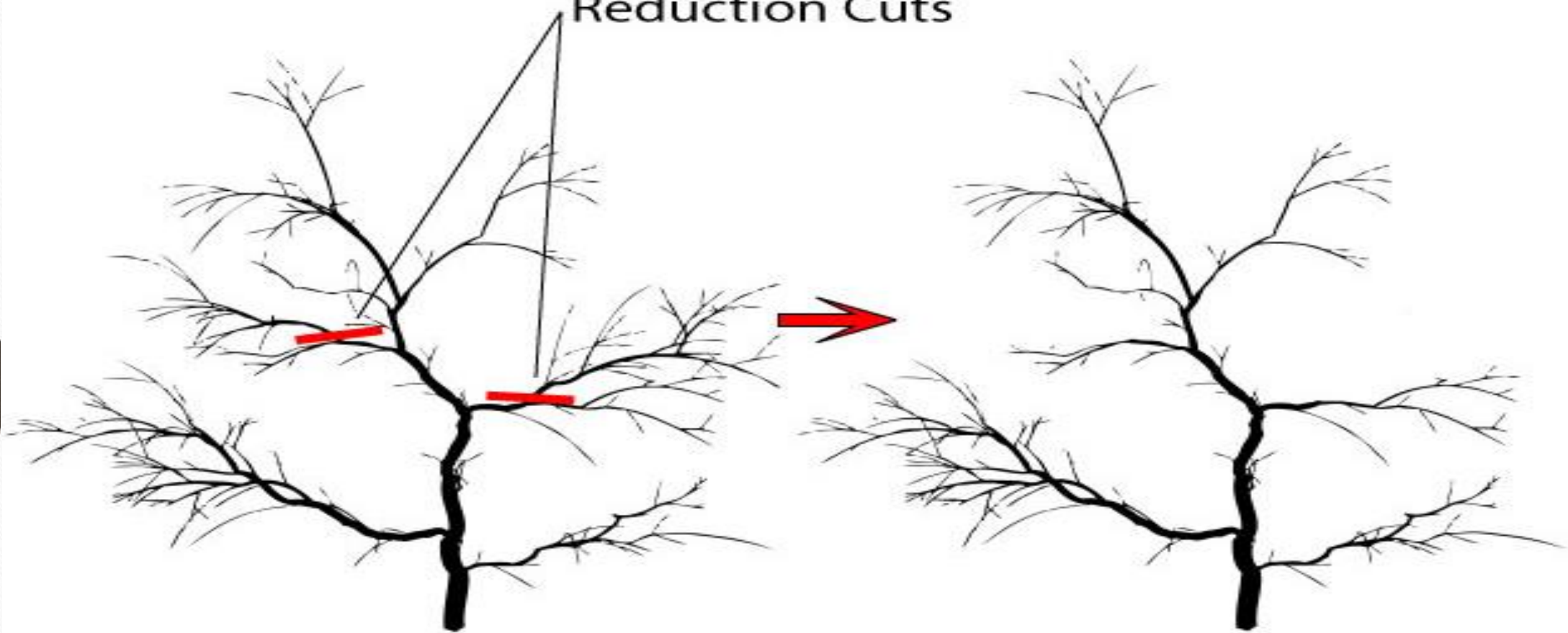


- A reduction cut slows growth on the reduced branch, which encourages development of a collar. This cut was made through the heartwood, as indicated by the dark area in the center. Although not ideal, this is sometimes necessary.

# Scaffolding



## Reduction Cuts





## Pruning Dose: How Much is too Much?

- The pruning dose is the estimated percentage of foliage or buds removed during pruning compared with the total amount on the tree prior to pruning. The ANSI A300 Part 1, Pruning Standard, 6.1.4 states that “Not more than 25 percent of the foliage should be removed within an annual growing season. The percentage and distribution of foliage to be removed shall be adjusted according to the plant’s species, age, health and site.”



# Summary

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- Tree longevity and stability are enhanced when trees are trained and managed with structural pruning. Long-lived trees appropriately placed in the landscape provide appreciable benefits to urban and suburban landscapes.