Proper Pruning

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Principles of Pruning

- Pruning = intentionally injuring a tree to achieve a management objective
- Pruning should not be random; objective should be defined beforehand
- Pruning should only be performed when necessary and with clear purpose
- Pruning should maintain the natural structure of the tree
- Pruning should involve the minimum number of cuts to achieve the desired objective
When to prune

• “Whenever saw is sharp”
• Easier to see branch architecture in winter
• Winter pruning = invigorating
  Summer pruning = dwarfing
• Flowering trees: prune after bloom to maximize flowers
• Fruit trees: prune during dormant season
• Mitigate hazards, correct storm damage, and remove broken branches immediately
• Pruning cycle depends on species, age, and objectives
Reasons to Prune
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• Maintain tree health and vigor
• Correct structural defects and promote strong branch unions
• Improve aesthetics
• Reduce hazard potential
• Correct storm damage or improper pruning
• Control size and form; provide clearance
• Influence fruit and/or flower production
Maintain tree health and vigor

- Increase light penetration
- Increase air penetration
- Remove diseased branches to prevent further spread
Correct structural defects and promote strong branch unions

Prune young trees to:

• establish strong central leader
• correct defects
• encourage good branch structure
Correct structural defects and promote strong branch unions

Codominant stems / multiple leaders = stems of equal size originating from the same point
Correct structural defects and promote strong branch unions

Included bark = bark pinched between two stems

“V-crotch”
Codominant stems and included bark often cause branch failure
Improve aesthetics

• Properly pruned trees look better and are more valuable
• Proper pruning retains natural branch structure
• Proper pruning does not cause excessive suckering or watersprouts
Reduce hazard potential

Hazard trees often exhibit visible clues
- Trunk or branch cracks
- Conks
- Included bark
- Broken / dead / hanging branches
Reduce hazard potential

codominant stems

dead branch

included bark

dead branch

water sprouts

broken branch

sucker

decay
Correct storm damage or improper pruning

- Remove damaged limbs
- Re-establish leader (if necessary)
- Don’t prune too heavily – tree will need foliage to recover
- Check for cracks or other signs of hazard potential
Correct storm damage or improper pruning

- Topping creates a “bushy” crown with weakly attached branches
- May be able to improve structure and form with restoration pruning
Control size and form

- Reduce height
- Improve clearance or view
- Direct growth away from utilities or structures
- Regular pruning needed to maintain artificial size or clearance
- Very difficult to keep a “big” tree “small”
- Plant right tree in right place to reduce future conflicts
Influence fruit and/or flower production

• Increase or decrease number and/or size of fruit and/or flowers, depending on
  – Timing of pruning (when)
  – Location of pruning cuts (where cuts are made)
  – Severity of pruning (how much is removed)

• Often species-specific
How to Prune
How to prune

ANSI A300 Standards
How to prune

Removal cut

Reduction cut
How to prune: Removal cut

Use 3-cut method on larger branches
How to prune: Removal cut

Look for branch collar
How to prune: Reduction cut

Cut back to a lateral branch that is at least 1/3 the diameter of branch to be removed
How to prune: Reduction cut

Bisect the angle between the branch bark ridge and an imaginary line perpendicular to the branch to be removed.
How to prune

Small wounds can seal via CODIT

Large wounds can result in decay and cracks
Compartmentalization Of Decay In Trees

• Trees are highly ordered, COMPARTMENTED plants, that instead of heal, trees SEAL in an orderly way the injured and infected tissues.
CODIT = Defense

- Larger, severe wounding or repeated wounding prevents encapsulation, promoting decay
How NOT to Prune
How NOT to prune

- Stub cuts
  - Wound too far from branch bark ridge
  - Difficult for woundwood to seal
  - Can create a decay column into trunk
How NOT to prune

- Flush cuts
  - Removes branch bark ridge
  - Creates larger wound
  - Does not properly seal with woundwood
  - Leads to internal decay
How NOT to prune

Topping

• It Doesn’t Really Work
• It’s Expensive
• It Starves a Tree
• It Creates Dangerous Trees

Photo courtesy of Terry Flanagan
How NOT to prune

Topping, continued

- The tree does not stay small and it is certainly not safer
- Shortens lifespan of a tree
- Removes too many food making leaves – photosynthesis
How NOT to prune

• Painting with wound dressing is NOT recommended
  – Research shows it is ineffective
  – Seals in moisture & may cause decay
  – Prevents tree from properly sealing wound
Pruning Types:
ANSI A300 terminology
Types of pruning: Crown cleaning

- Selective removal of dead, diseased, detached, and broken branches
  - Reduces hazards
  - Promotes tree health
  - Improves aesthetics
- Does not involve unnecessary removal of live, healthy branches
Types of pruning: Crown thinning

- Selective removal of live branches
  - Improves light penetration and air movement
  - Reduces “wind sail”
  - Reduces tip weight of heavy branches
- Remove no more than 25% of live tissue
  - triggers excessive suckering
- Remove evenly throughout the crown
Types of pruning: Crown raising

- Pruning lower limbs to provide vertical clearance for pedestrians, vehicles, or structures
- Do not “limb up” too high
- Vancouver code = 8 ft. over sidewalk 14 ft. over roadway
Types of pruning:
Crown reduction

- Pruning to reduce the height and/or spread of canopy
  - Use proper pruning cuts
  - NOT the same as topping
- Sometimes removal and replacement of tree is better option
Types of pruning: Crown restoration

- Selective pruning to improve structure, form, or appearance after damage
  - May require multiple pruning sessions over several years
  - Used to correct storm damage, topping, vandalism, etc.
Types of pruning: Specimen / detail pruning

- Making small pruning cuts on ornamentals to emphasize beauty, shape, branch structure
- Pruning usually occurs annually
Tools of the Trade
Pruning tools

Hand Pruners

- Branches up to 1/2"

Pruning Saw

- Branches up to 3"
- Designed for green (live) wood
Pruning tools

Pole Pruners
Pruning tools

Chainsaw

Branches > 3” diameter

**Always** wear proper safety equipment

*If a chainsaw is needed, you may want to consider hiring a professional.*
Questions?

www.cityofvancouver.us/urbanforestry