

APPENDIX 18 - Do's and Don'ts in Pruning (Factsheet)

DO's and DON'Ts in Pruning



Introduction

"Pruning is one of the best things an arborist can do for a tree but one of the worst things we can do to a tree"

-Alex Shigo

Pruning is the most common tree maintenance work. Proper pruning helps to selectively remove defective parts of a tree and improves the structure of a tree, thereby contributes to the overall tree health and structure and reduces the risk a tree may cause to nearby persons or properties. Improper ways of pruning, in particular topping, can be detrimental to the health and structure of a tree and make a tree hazardous, hence it is essential to establish clearly defined objectives before commencement of any pruning

PROPER TREE PRUNING

	✓ DO's	✗ DON'Ts
Objective	<ul style="list-style-type: none"> Prune as necessary. 	<ul style="list-style-type: none"> Do not prune excessively or unnecessarily.
Common Types of Pruning	<ul style="list-style-type: none"> Crown Cleaning Crown Thinning Crown Reduction Crown Raising 	<ul style="list-style-type: none"> Lion Tailing Topping Over Lifting
Where to prune?	<ul style="list-style-type: none"> Edge of Branch Collar 	<ul style="list-style-type: none"> Stub remaining Flush Cut Large Pruning Cut
How to make pruning cut?	<ul style="list-style-type: none"> 3-point Cut 	<ul style="list-style-type: none"> Jagged Wounds Bark Tearing

How much to prune?

In general, pruning of large/mature trees should be avoided as far as practicable. No more than 25% of the live crown should be removed in any one year even for young trees.

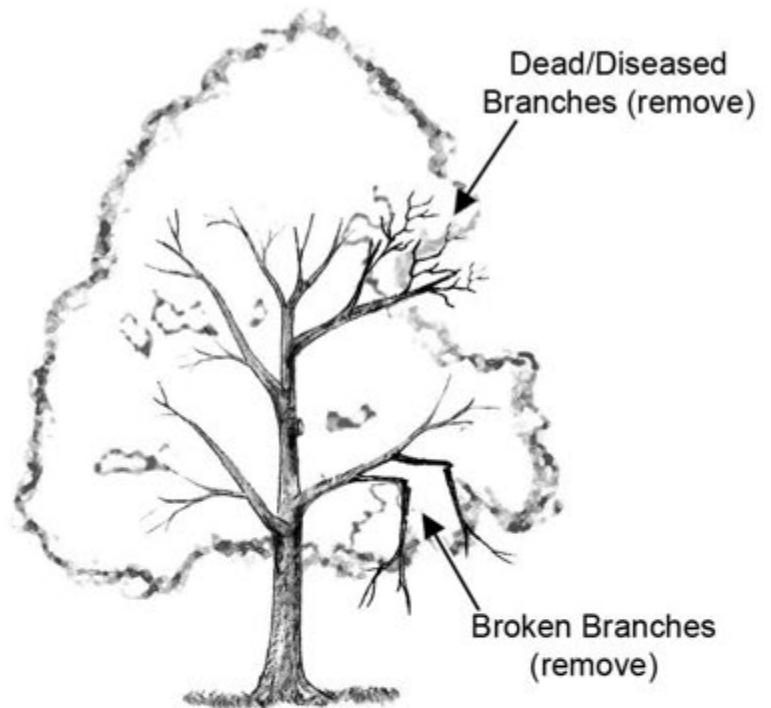
Common Types of Pruning

✓ Crown Cleaning

Definition: Crown cleaning consists of selective removal of dead, dying, diseased and weak branches from a tree's crown.

Objective: As a tree grows, defective branches and watersprouts are found in the tree's crown from time to time. If these are not removed in a timely manner, the condition may worsen and affect the overall health of the tree.

Do's: Crown cleaning can be undertaken any time to correct these small growth problems before they have a chance to become major problems.



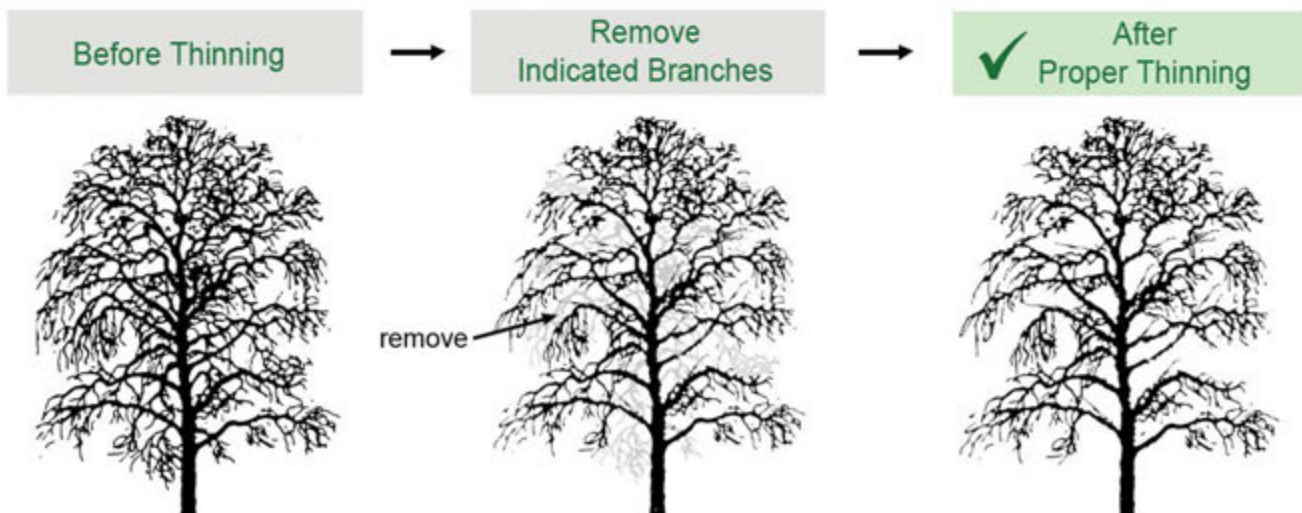
✓ Crown Thinning

Definition: Crown Thinning involves crown cleaning as well as the selective removal of small branches to reduce crown density.

Objective: To allow sunlight and air movement to penetrate to interior branches by developing a lighter and more open branch canopy.

Do's: Crown Thinning should be performed in a way to maintain an even distribution of branches and foliage, and care must be taken not to over-thin a tree. The extent of thinning in a year should be in the range of 10-15% of the live crown and should not exceed 25% in any case, especially for mature trees.

Don'ts: Clearing too much inner foliage will adversely affect the health of a tree. Vigorous production of watersprouts on interior limbs indicates over-thinning.



Common Types of Pruning

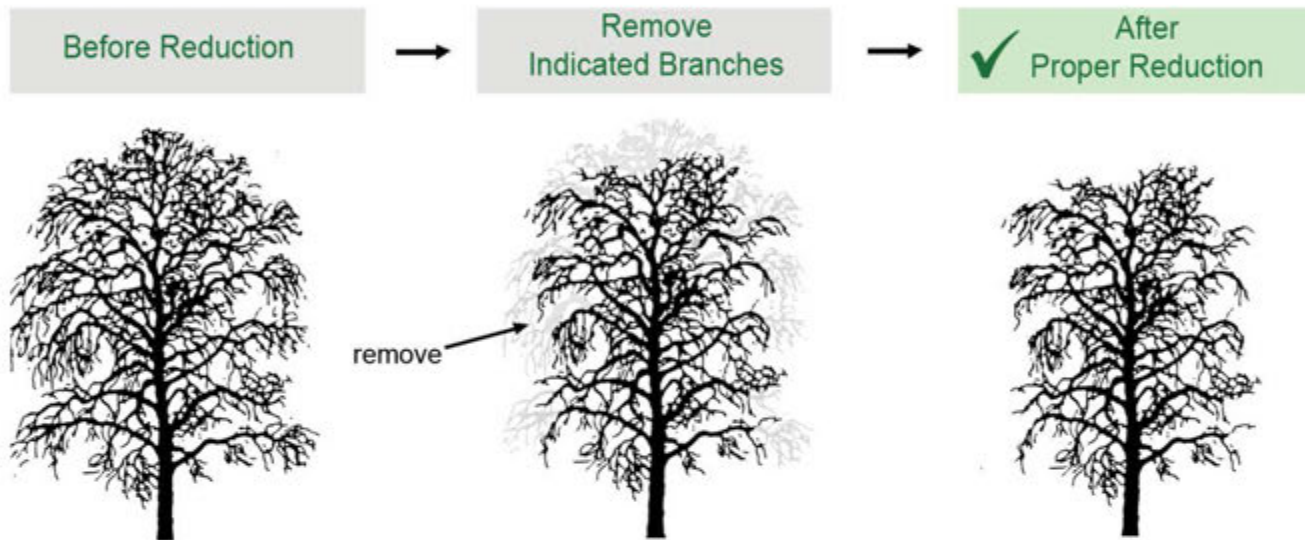
✓ Crown Reduction

Definition: Crown reduction is the selective removal of branches and stems to reduce the height and/or spread of a tree.

Objective: This type of pruning should be done when there is a need to minimize risk of failure of a tree, or reduce interference onto nearby buildings or other structures.

Do's: Reduction shortens stems and branches back to live lateral branches.

Dont's: Reduction should be avoided for mature, old or stressed trees. In any case, no more than 25% of the foliage should be removed.



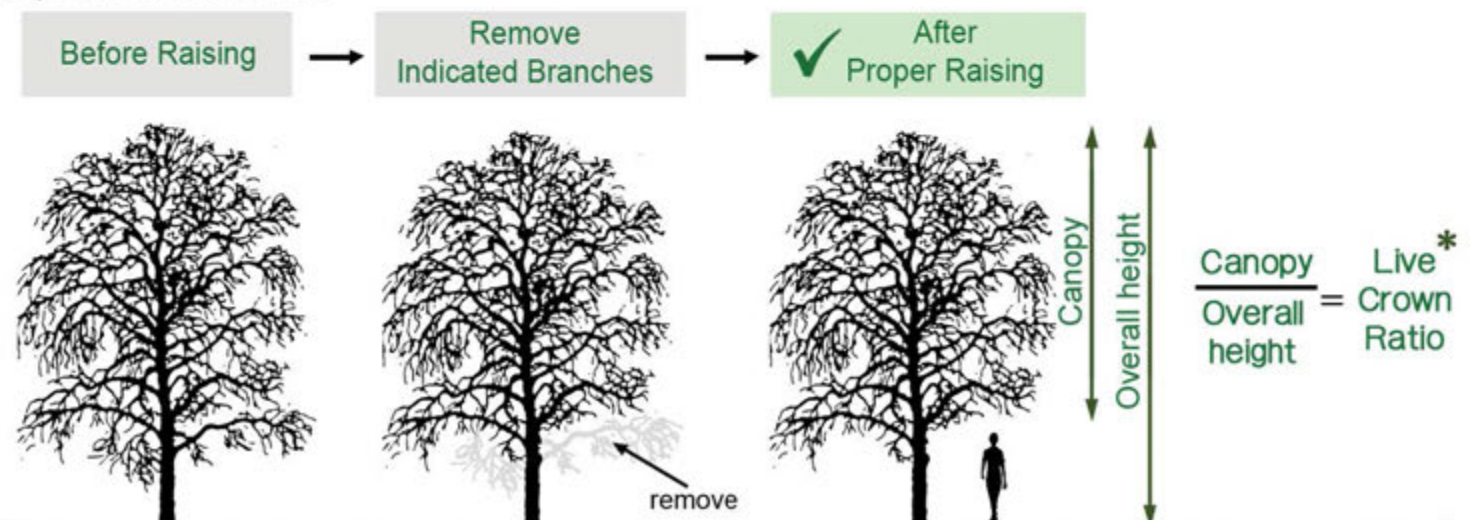
✓ Crown Raising

Definition: Crown Raising involves removal of lower branches of a tree.

Objective: To provide head height clearance for buildings, signs, vehicles, and pedestrians.

Do's: The resulting **live crown ratio*** should be more than 60%. Crown raising is best done gradually over a period of years.

Don'ts: Excessive removal of lower limbs should be avoided so that development of trunk taper is not affected.



Where to prune?

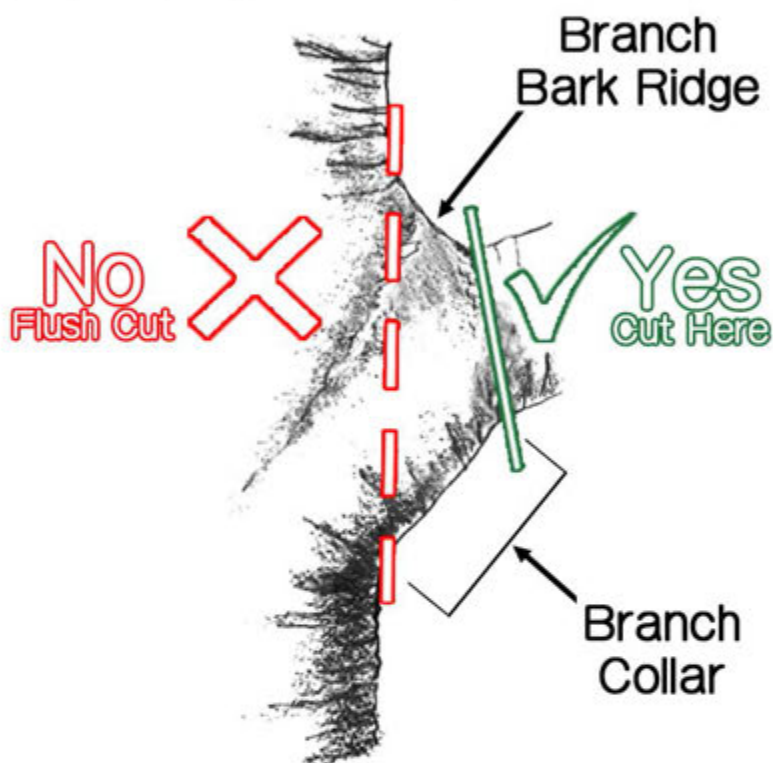
✓ Edge of the Branch Collar

Scenario 1- when there is **visible** Branch Collar

At the base of a branch where it joins the trunk, a **branch collar** can often be seen as a distinct swelling on the bottom, sides, and top of the branch base.

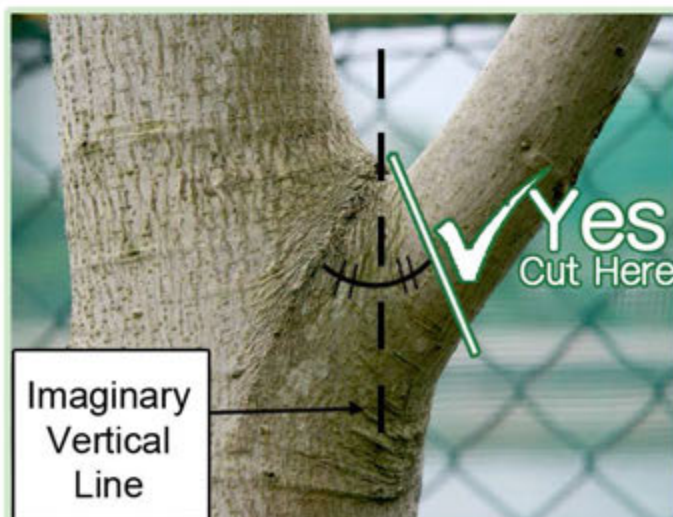
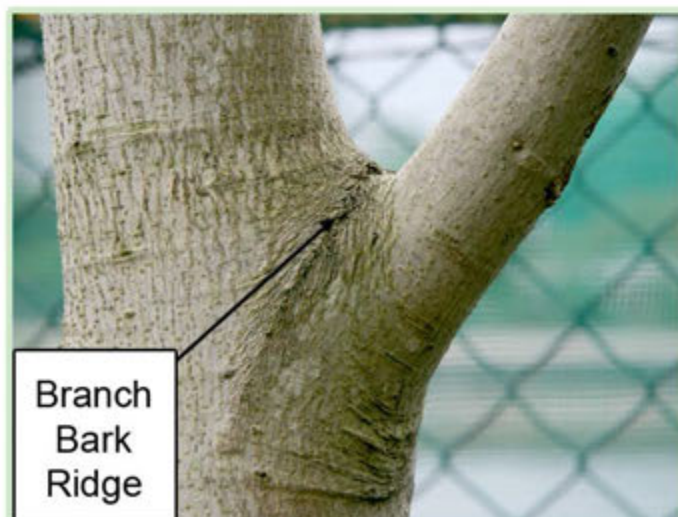
Do's: When removing a branch, it is best to make the pruning cut as close to the trunk as possible but just outside the edge of the collar. This will leave the branch protection zone intact, and prevent any possible decay from spreading to the trunk.

Dont's: Damage to the collar due to improper pruning may initiate decay in the trunk below the pruning wound.



Scenario 2- when there is **no visible** Branch Collar

Do's: Create an imaginary line parallel with the trunk when there is **no visible branch collar**. Duplicate the angle between the Branch Bark Ridge and the imaginary line to another side of the line. Execute the pruning cut from the top of the branch that shows an abrupt turn into the union.



How to make pruning cut?

✓ 3-point Cut

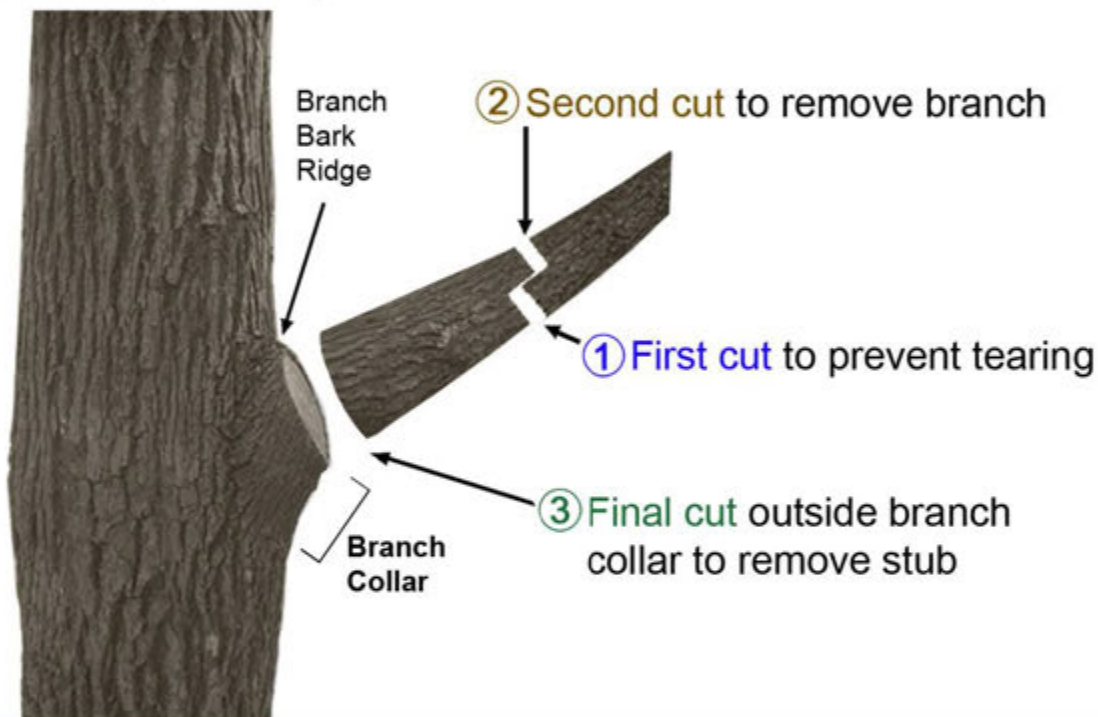
Objective: The most efficient and least damaging way to remove large branches without causing damage to the tree is adopting a 3-cut approach, by which a branch is removed by three sequential cuts.

Do's:

① **The first cut** undercuts the limb at some distance away from the parent branch or trunk. A properly made undercut eliminates the chance of bark tearing during removal of the limb.

② **The second cut** is a top cut undertaken slightly further out than the undercut which helps to remove the limb.

③ **The final cut** is performed just outside the branch collar to remove the resultant stub.



Good pruning cut will help tree to compartmentalize decay



Complete closing of wound after a few years

Common Types of Improper Pruning



No Topping

1. Starvation:

- After topping, a large portion of the tree crown is removed.
- The removal of green foliage which is the source of food production will temporarily cut off the food making ability.

2. Insects and Diseases:

- After topping, the large diameter and the terminal location of these cuts reduce the process of 'Compartmentalization Of Decay In Trees', i.e. the natural process of wound closure in trees.
- The tree becomes vulnerable to pests and diseases.

3. Weak Limbs:

- Extensive water sprouts will develop, giving rise to new limbs that are weakly attached.
- These weak attachments are prone to failure.

4. Ugliness:

- The tree form is heavily distorted. Even if the tree survives, it will never return to its original and natural form.
- The valuable landscape for the community is permanently lost.

5. Cost:

- The adverse impact on the tree may give rise to increased expenses in the long term, due to the replacement cost, the risk of liability from failure of weakened branches, and increased future maintenance.



Common Types of Improper Pruning



No Lion Tailing

Definition: If only the branches from the interior of the canopy are removed, too much weight at the ends of the branches would cause limbs to over-elongate, a situation known as lion-tailing.

Why Not: Lion-tailing may result in sunburn, watersprouts, reduced branch taper, weakened branch structure and breakage.



No Over-Lifting

Definition: A common malpractice on pruning a large tree or when performing crown raising is removing many or all interior low branches, giving rise to a situation known as over-lifting.

Why Not:

- Interior branches also provide food source needed by the tree to carry on normal defense and other functions.
- Health of the tree can be adversely affected with removal of excessive live tissues.
- A poor tree form with low live crown ratio is created.
- The tree will become more prone to failure.



Where to prune?



No Flush Cut

Definition: Cutting into the branch collar creates a flush cut.

Why Not: A pruning cut flush with the trunk will damage the branch collar and make a larger wound that opens the trunk to decay, causes cracks, and increases the likelihood of disease infection.



No Stub remaining

Definition: Pruning cut that is located far beyond the branch collar will leave behind a branch stub.

Why Not: The remaining stub is susceptible to wood-decaying organisms, especially while the cut is open to the air, before wound-wood completely closes over it. Decay beginning in stubs can break through the branch protection zone and move into the trunk, causing trunk rot and increasing the potential of branch/trunk failure.



No Large Pruning Cut

Why Not: Large pruning cut outside of branch collar exposes a large area of heartwood and creates a large wound that increases the likelihood of decay and disease infection.



How to make pruning cut?



No Bark Tearing

Why Not:

- Tree bark protects the inner bark that is responsible for bringing food produced by the leaves to the rest of the tree.
- When a pruning cut is improperly made resulting in bark tearing, the branch collar is damaged and this would impair the tree's ability to close wound and will lead to decay.



No Jagged Wounds

Do's:

- A clean cut during pruning is important.
- Pruning tools should be sharp so as to make clean cuts without jagged edges or stubs. Tools adequate for the size of cuts being made should be selected.

Why Not:

- Jagged wounds don't close well and may lead to more extensive decay, resulting in more broken limbs.
- Jagged wounds will interfere with the tree's ability to transport nutrients and therefore affect the overall tree health.



General Note

Please read in conjunction with 'Guidelines on Pruning' at <http://www.devb.gov.hk/greening/en/preservation/guidelines.pdf>

References

- Gilman, E. F., "An Illustrated Guide to Pruning", 2nd edition, Delmar Publishers, Albany NY, 2002
- Gilman, E. F., Lilly S.J., "Best Management Practices- Tree Pruning", International Society of Arboriculture, US, 2002
- Harris, R.W., Clark, J.R., & Matheny, N.P., "Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vines", 4th edition, Prentice Hall, Upper Saddle River, NJ, 2004
- Hazell, J., et al., "Guidance Note 8- Framework For Tree Work Contracts", The Arboricultural Association, UK, 2009
- Tree Care Industry Association, "American National Standard for Tree Care Operations- Tree, Shrub, and Other Woody Plant Maintenance- Standard Practices (Pruning) (A300, Part1)", Tree Care Industry Association, Manchester, NH, 2007