

PREPARING THE TREE ROOTS

Technical information and practices for planting new trees



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Containerized trees

These trees are grown in prepared soil inside a plastic container.



Container grown trees are typically smaller than the field grown B&B trees. The trunk flare may not be easy to find because the trees are younger.

Circling roots

Thick, woody roots tend to grow in a circle along the edge of the container.



Roots will continue to grow in a circle unless they are redirected.
The roots can be retrained to grow horizontally by being cut or pulled apart.

Circling roots

These roots continue to grow in a circle even after planting in the landscape.



If circling roots are not removed at time of planting they can lead to tree mortality. In the picture above, the tree died 8 years after being planted in the landscape.

Disrupting circling roots

Use a hand or a tool to scratch the outside edges of the root ball.



Ensure adequate irrigation before and after planting.
New roots will begin to grow obliquely away from the root ball.

Or, shave the root ball at time of planting

Use a hand saw to cut 2-cm from the outside edges of the root ball.



This can be done before planting while the tree is still in the container.
Alternative: use a shovel to cut around the outside edge after the tree is planted.

Balled-and-Burlapped trees

These trees are field grown and harvested with the field soil.



Balled-and-burlapped trees are commonly called “B&B”.

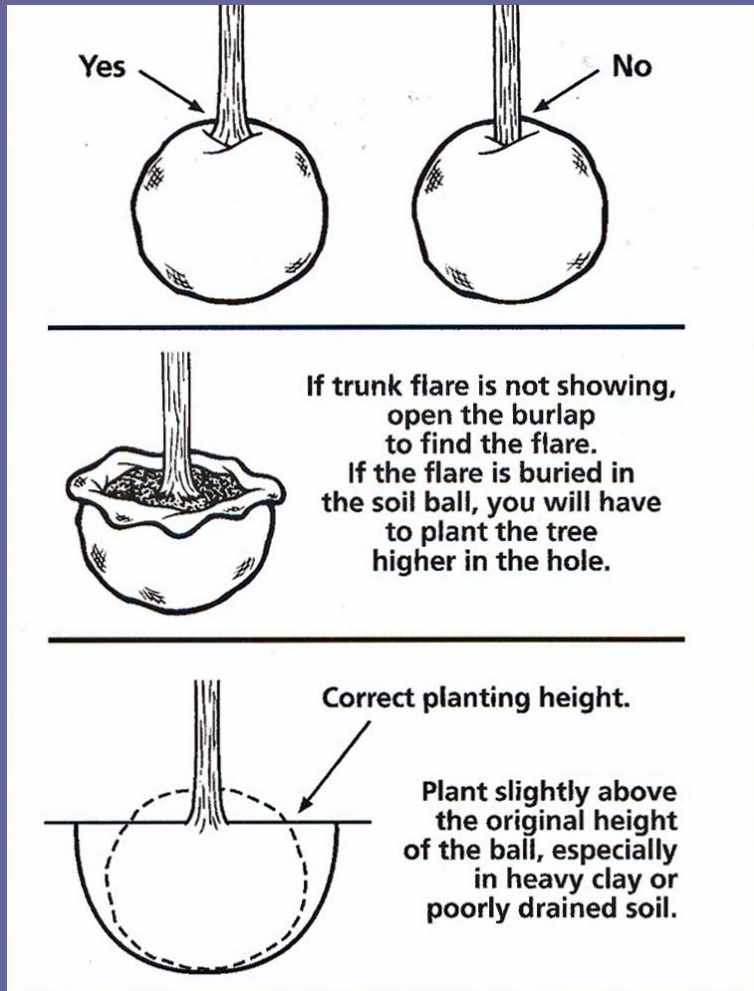
This method is generally used for shipping large size trees.

The roots and soil are held together by burlap, a wire basket and twine.

Plastic shipping wrap may also be around the outside of the root ball. Remove all plastic wrapping before placing the tree in the planting hole.

At time of planting locate the trunk flare

This is the swelling at the base of the tree where the trunk meets the roots.



If the trunk flare is not visible, open the top of the burlap.

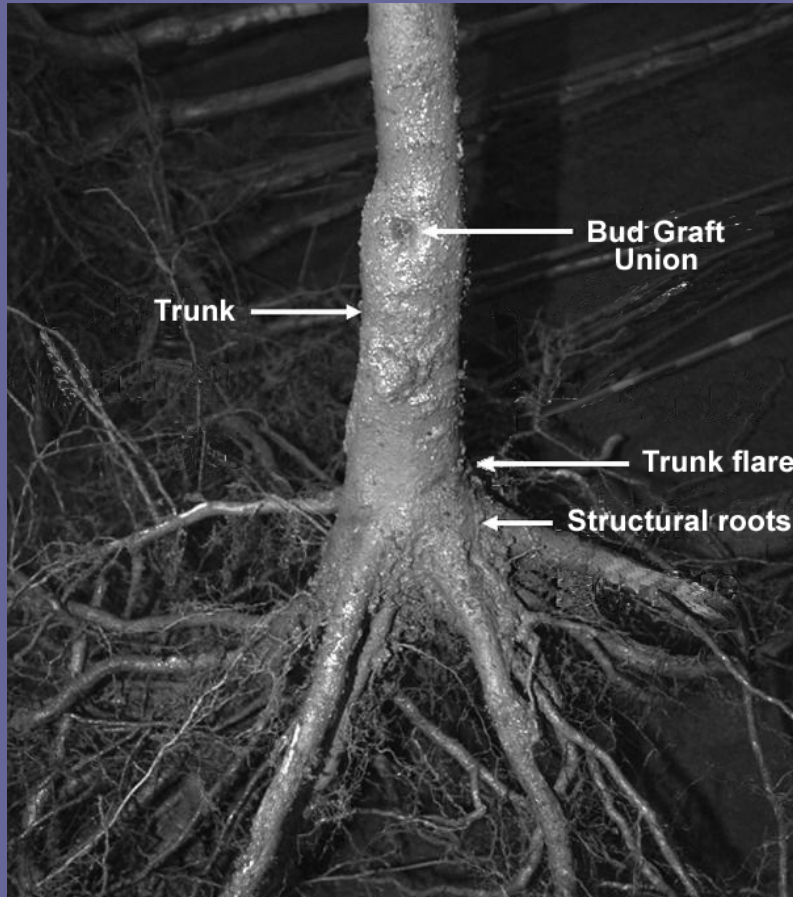
Remove up to 10-cm of soil to expose the trunk flare.

It is important for the trunk flare to be exposed to the air.

Burying the trunk flare with soil or mulch will retain excess moisture which later may trigger diseases.

Locating the trunk flare and structural roots

Structural roots should be within 7-cm of the soil surface.



Measure the depth of the planting hole to match the depth of the root ball.

Measurements should be based on placing the structural roots within the top 7-cm of the final grade.

Use the root flare to find the structural roots.

The structural roots should grow obliquely away from the trunk to provide the anchorage and root framework of the tree.

Diagram adapted from Day et al. 2009. Causes and Consequences of Deep Structural Roots in Urban Trees: From Nursery Production to Landscape Establishment. *Arboriculture & Urban Forestry*. 35(4): http://cnre.vt.edu/urbanforestry/posters/Day_Watson_etal_2009.pdf

Remove wrapping materials from B&B trees

Remove twine, burlap and wire from the trunk down to 30-cm below soil grade.



Drawing from Introduction to Arboriculture:
Planting and Early Care CD. 2006.
International Society of Arboriculture

The trunk flare should be level with the final soil grade.
It is better to plant the tree a little high than too low.
This allows for some settling of the root ball and the surrounding soil.

Industry Standards

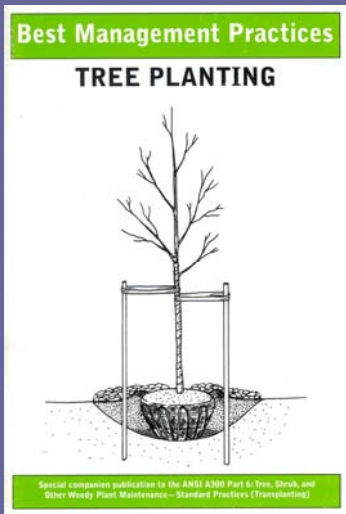
Roots and Planting



“The trunk flare shall be 2.5 to 5 cm visible after the tree has been planted.”

“Damaged or broken roots should be cut back to healthy, living tissue. Roots should be spread evenly in the planting pit.”

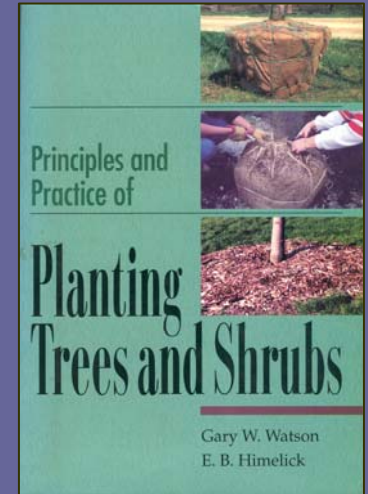
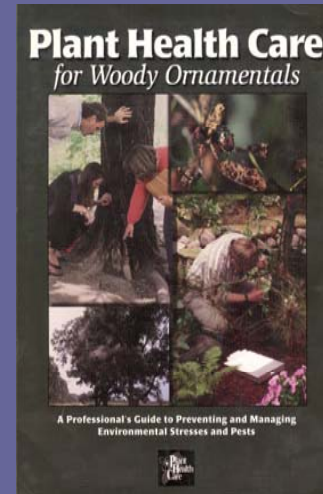
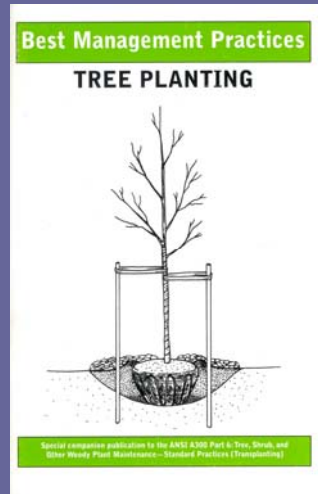
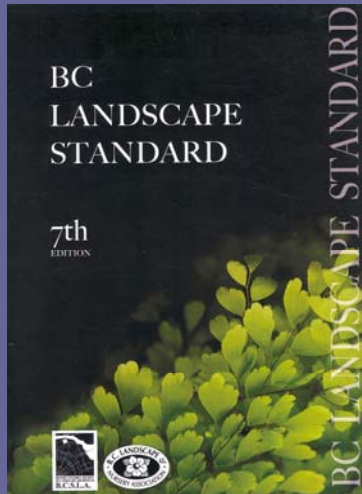
*The British Columbia Landscape Standard (2008)
British Columbia Society of Landscape Architects &
and British Columbia Landscape & Nursery Association*



“Excessive cutting of the roots can lead to serious root loss and could lead to increased stress after planting, but moderate stress is preferable to allowing circling roots to persist.”

*Best Management Practices Tree Planting (2005)
International Society of Arboriculture*

For more details, consult these publications



Available from BCLNA
(B.C. Landscape and Nursery Association)
<http://bclna.com/bc-landscape-standards/>

Available from ISA
(International Society of Arboriculture)
<http://secure.isa-arbor.com/webstore/>

More information available at the University of Florida, IFAS <http://hort.ufl.edu/woody/>

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