# The Benefits of Trees

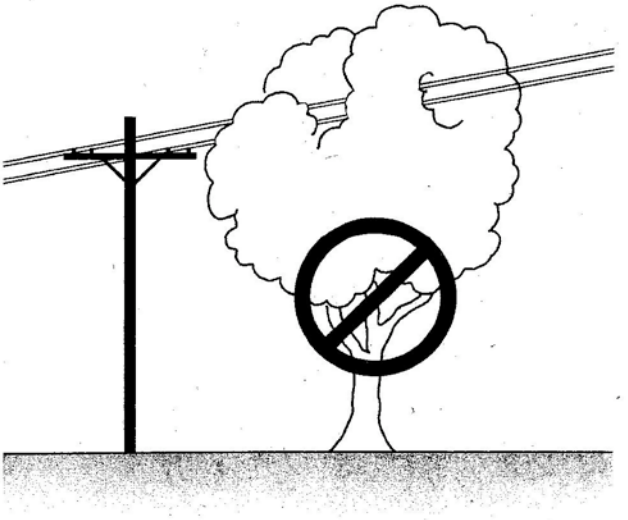
Trees may be the most important feature of our landscapes. They provide beauty and enjoyment through their many forms, colors, flowers, and fruits.

Along with the shade and beauty they provide are the many less visible benefits that make trees valuable assets. They enhance our environment by producing oxygen, storing carbon, cooling streets, preventing erosion, and filtering noise and pollutants. They can block wind and screen undesirable views. Attractive trees and landscaping add to a property's real estate value.

Perhaps the most impressive benefit of trees is the dollars saved on utility bills. Research has shown that properly located trees can reduce air conditioning costs in homes and office buildings by 30 percent or more.

Too often, we take trees for granted and don't properly plan and plant. Not matching the right tree to the site can prevent the desired aesthetic and environmental benefits and result in unexpected liabilities and costs.

Selecting the RIGHT TREE for the RIGHT PLACE will help you get the long-term benefits, beauty, and satisfaction from the trees you plant.



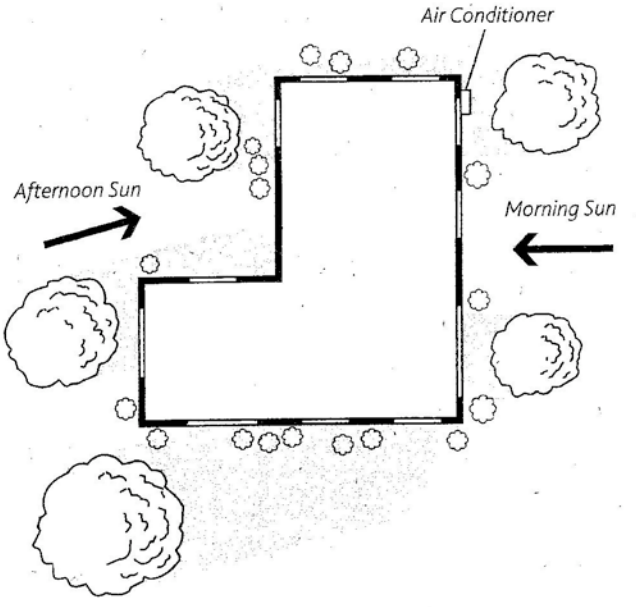
*Don't plant trees that grow higher than 30 feet under utility lines as they could cause power outages and create maintenance problems.*

# Selecting the Right Tree

Planning ahead is the most important step you can take to ensure that the time and money you invest in planting a new tree are well spent. The key to successful landscaping is to plant the right tree in the right place.

What will the tree look like when it is mature? Above all, find out how tall and what shape your tree will be when it is fully grown to make sure that it fits the space and purpose you have for the tree.

The checklist on the following pages will guide you in the selection of the right tree. Use this guide along with a good resource, such as your favorite local nursery or plant book, to prepare a list of trees that will meet your needs. Then go through each successive item in this guide and eliminate trees that do not conform to site restrictions or conditions. If the guide is followed carefully, the final list should provide you with the best trees for your specific landscape.




*Plan your residential landscape: Save money on utility bills by planting a large tree to shade the air conditioner. Other trees are carefully located to shade windows from morning and afternoon sun. Shrubs planted on all sides of the house help reduce the temperature of the soil and the walls. Be sure to prune shrubs under windows so they don't block cooling trade winds.*

# The Checklist

## 1. What do you want the tree to do?

(Pick one or more.)

- ❑ Shade
- ❑ Windscreen
- ❑ Visual screen
- ❑ Accent
- ❑ Colorful fruit
- ❑ Flowers
- ❑ Focal point for yard
- ❑ Grow fast
- ❑ Grow slow
- ❑ Grow tall
- ❑ Stay small
- ❑ Other _____

## 2. How much space does the tree have to grow?

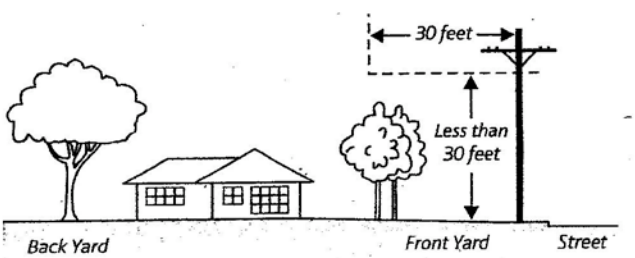
Are there any obstacles overhead, to the side, at ground level, or even underground?

❑ No power lines overhead

If you are planting near power distribution lines that run through residential areas, the most important thing to remember is the 30-FOOT RULE: Trees and plants within 30 feet of power lines should not grow higher than 30 feet tall when fully grown. Consult your nursery or landscape professional for trees whose mature height does not exceed 30 feet.

❑ No buildings in close proximity

Don't plant trees that can grow large enough to contact buildings or block signs. Trees that grow over roofs and rain gutters can create maintenance problems and damage buildings.




*For sites within 30 feet of power lines, select trees and plants that grow to less than 30 feet. You don't want your shade trees to interfere with safe, reliable electrical service.*

❑ No underground utilities

Do not dig or plant until you identify all nearby underground utility lines, including cable, sewer, and power lines.

Do not plant trees on top of underground lines.

Do not plant trees with aggressive roots near underground utilities where their roots can damage the facilities.

❑ No swimming pools near site

If trees will be near a pool, select trees that do not drop leaves that will fall or blow into the pool.

❑ No plants or other landscape features that may suffer in the shade of a large tree

Ensure that large trees will not grow over and shade out smaller trees, shrubs, and groundcovers.

❑ No obstruction of scenic views

Ensure that the tree will not grow to block a desirable view for you or your neighbors.

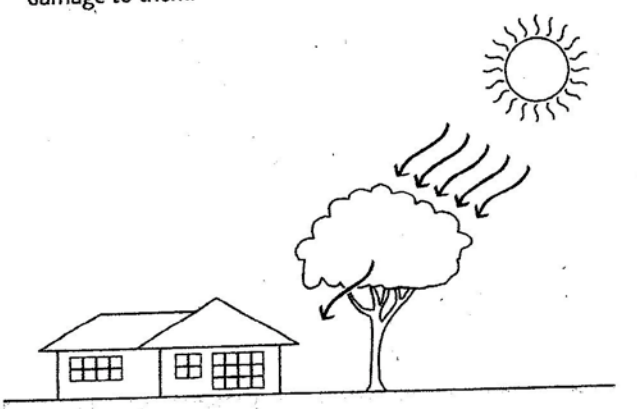
❑ No nearby driveways/roadways/sidewalks

Select trees that have a high, clear trunk or that can be practically pruned so as not to obstruct safe travel.

Do not plant large trees near driveways, roadways, curbs, and sidewalks where their roots may cause damage.

❑ No nearby walls to undermine

Do not plant large trees near walls. Their roots may cause damage to them.



*Tree shade is better than Venetian blinds, plastic coatings, or reflective glass surfaces at cooling your home on hot, sunny days. Shading walls and windows can reduce air conditioning energy costs by 30 percent or more.*

❑ No nearby property boundaries

Do not plant trees where roots can invade and damage neighboring properties.

❑ Other considerations...

It's important to identify and avoid any obstacles that could restrict the canopy and root growth of your tree, or could be damaged by any part of your tree. Also, identify any situation where your tree could create a safety hazard or nuisance.

If obstacles are near the site, how far away from the planting site are they? They must be far enough so that the top, canopy, or roots of the tree do not interfere with these obstacles when the tree is at its mature size and maximum growth range. It's important to note that roots can extend two to three times beyond the canopy. With most trees, however, the roots with the greatest potential to cause damage are generally found within the area under the canopy.

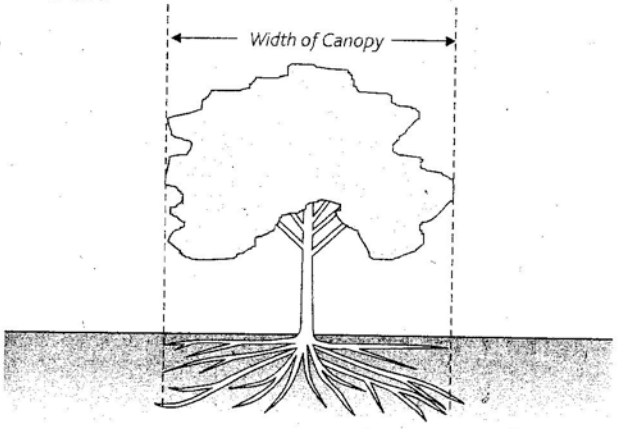
## 3. How are the planting conditions at the site?

Select a tree that will thrive or at least tolerate the growing conditions of the planned site.

❑ Quality of sunlight

Is there sufficient sunlight to ensure proper growth?

-Direct all day
-Filtered through overhead obstacles
-Shade




*Roots can extend 2 to3 times beyond the canopy, although, with most trees, the roots with the greatest potential to cause damage are generally found within the area under the canopy.*

❑ Sufficient natural water

Natural availability of water may limit the selection of trees suitable for the site, without artificial irrigation.

-Dry
-Wet
-Moderate

❑ Quality of soil

The type of soil on site may limit your selection of plants to tolerant species.

-Heavy clay
-Sand
-Nice topsoil

❑ Depth of the soil

Make sure the soil is deep enough to support the tree's root system. Most of the tree's roots are confined to the top two feet of the soil layer. A large tree may be inappropriate for shallow or unstable soil.

❑ Exposure to salt spray

If the planting site is near the beach, make certain that the tree you select is salt tolerant.

❑ Strong winds

If the site is windy, are the trees sensitive to or damaged by strong winds?

## 4. Will the tree grow well in your neighborhood?

One easy way to answer this question is to take a look around your neighborhood. See how others have used trees in their landscaping design and find out what kinds of trees are growing well. Your local plant nursery can also suggest appropriate trees for your climate and soil conditions.

## 5. How much maintenance does the tree require?

-Is the tree low maintenance?
-Does the tree drop lots of leaves and/or fruit?
-What kind of maintenance can you reasonably provide?

If cleanup is a concern, don't plant trees that shed.

# How to Plant the Tree

**Digging the Hole:** The hole should be dug as large as practical, but at least twice the width of the root ball. If the soil is very dense and hard, the hole should be three to five times the width of the root ball. The hole should not be dug too deep.

The hole should be slightly shallow so the top of the root ball is one to two inches above the level of the surrounding soil. The bottom of the hole should not be filled with soft soil or with gravel to support and raise the tree.

**Removing the tree from the container:** Before planting, the tree must be carefully removed from the container. In many instances, the tree will have been kept in the container for an extended period of time causing the roots to grow into a dense, circling mass packed into the container.

In these instances, the root mass should be sliced vertically around the root ball, in three to four places with a sharp knife, to allow you to separate the roots and cause them to grow out.

Roots that grow across and around the ball will not provide adequate support for the tree and will eventually girdle and strangle the tree.

**Setting the tree:** Use care when handling the tree to minimize damage to the tiny fibrous roots and the stem. Handle the tree by the root ball, not grabbing the trunk or branches. After the tree is set in the hole, check the height of the root ball to ensure that it is not too low. Remove tags and labels so they do not girdle the tree.

**Backfilling the hole:** In most cases, it is better to backfill the hole with soil from the site. Research has shown that soil amendments (compost or sand) do not assist in tree establishment and growth. Do not fertilize the tree until at least one growing season after planting.

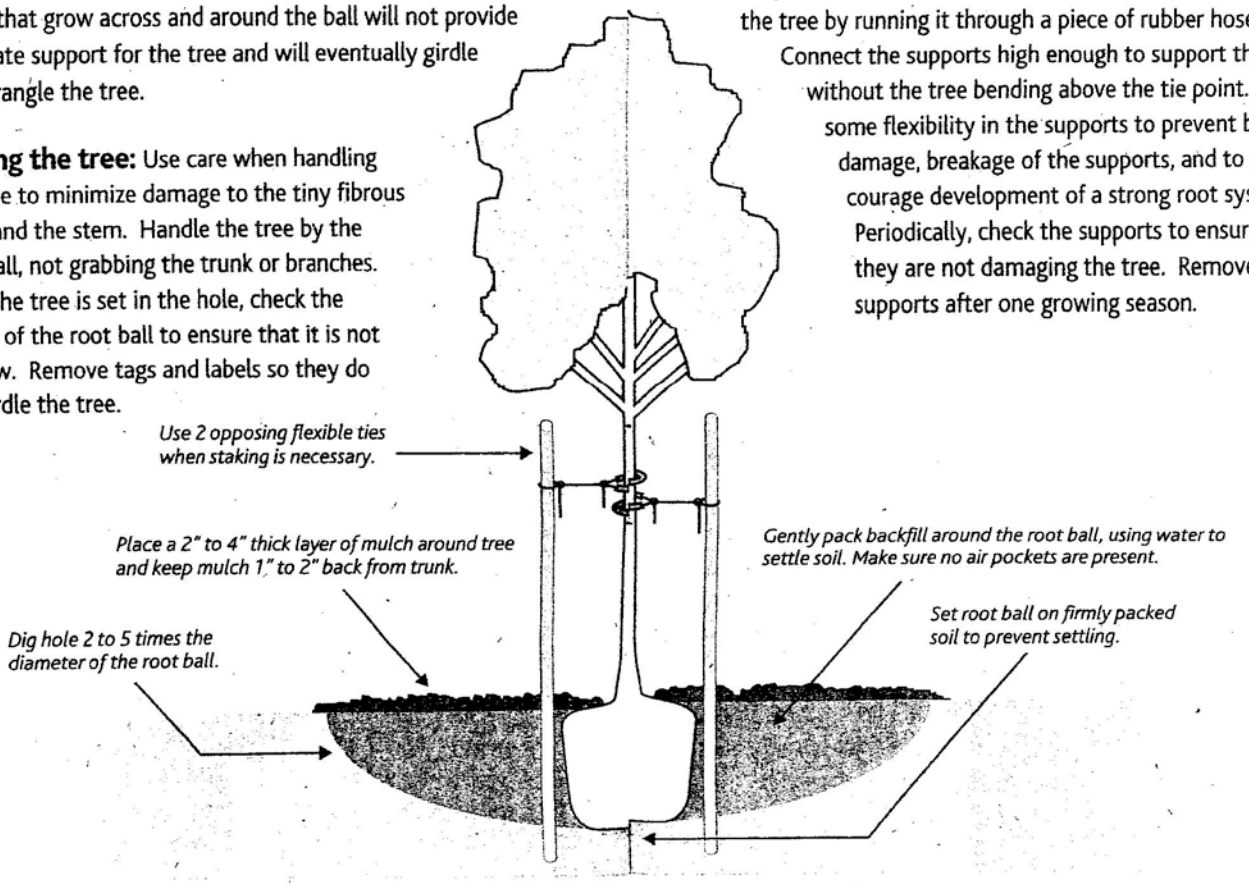
Work the soil around the ball and firm it in to ensure that no air pockets are present. Do not pack the soil! Water thoroughly while backfilling to help eliminate air pockets. Ensure that the top of the root ball is slightly above the level of the surrounding soil. Do not plant the tree too deep!

It may be beneficial to create a small berm (mound of soil) around the perimeter of the hole to retain water. If the soil is very dense, leave some breaks in the berm so that excess water can drain.

**Staking:** Do not stake trees unless absolutely necessary to support or to protect the tree from damage. If staking is required, place two opposing stakes to provide the desired support or protection.

Support the tree by using soft flexible material, such as strips of rubber inner tube, that will not damage the tree bark from rubbing. If wire is used, cushion the wire where it contacts the tree by running it through a piece of rubber hose.

Connect the supports high enough to support the tree without the tree bending above the tie point. Allow some flexibility in the supports to prevent bark damage, breakage of the supports, and to encourage development of a strong root system. Periodically, check the supports to ensure that they are not damaging the tree. Remove all supports after one growing season.



# Caring for the Tree

**Mulch:** After proper selection and planting, the single best thing you can do for any tree, just planted or older, is to mulch. Organic mulch can be purchased at most garden supply stores or from mulch suppliers. You can also create mulch from your own compost pile.

Mulch retains moisture, protects trees from damage from lawn mowers and weeders, moderates soil temperatures, provides a natural interchange of nutrients, controls weeds, and eliminates competition for space, nutrients, and moisture from grass. Mulch zones should encircle the tree from the trunk to a distance of at least three feet.

Larger trees should be mulched from the trunk to a distance of approximately one foot for each inch of trunk diameter. If it is impractical to mulch the prescribed distance for larger trees, the mulch zone should be as large as possible, but at least twelve feet in radius from the trunk.

**Water:** Water management is based on the size and type of plant, air temperature, humidity, amount of sunlight, wind, and soil type. The most important point is to select a tree that is appropriate and tolerant of the natural water levels of your neighborhood. However, during dry or hot and windy periods, especially with very light and sandy or heavy clay soils, additional watering is desirable.

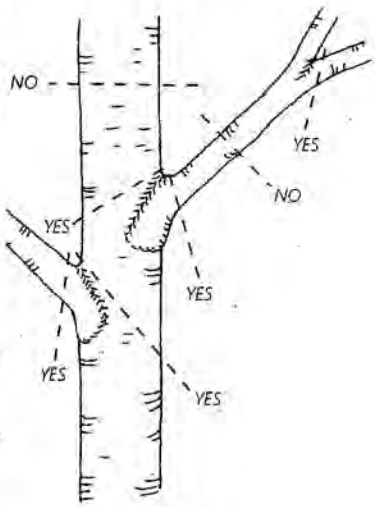
When watering is performed, it should be done in the early morning. This will minimize water loss from evaporation and will allow time for leaves and soil to dry, which helps prevent fungal problems. Watering should be performed infrequently and slowly so that it percolates deeply into the soil. This encourages good root structure and better root distribution. Water should be distributed evenly to as much of the root system as possible.

**Fertilizer:** Like watering, fertilizing should be kept to a minimum. A regular mulching program should maintain a good nutrient cycle, minimizing the need for supplemental fertilizer. However, on certain sites where certain nutrient requirements cannot be maintained or acquired, or construction or damage creates stress, fertilizer is beneficial.

It is advisable to consult a certified arborist for fertilization recommendations for specific tree species and conditions.

Generally, a slow-release fertilizer, applied at rates according to label directions during times when moisture levels are high, is the most effective.

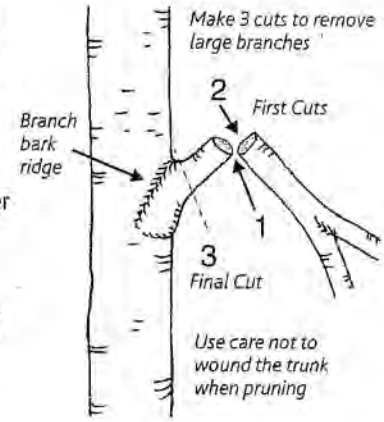
**Pruning:** Pruning should be performed to remove dead, damaged, diseased, and crossing limbs, to reduce crowding of branches, and to eliminate hazards. Pruning can also be performed to slow growth, to reduce wind resistance, to increase light penetration, to shape the canopy, and to prevent or enhance flowering and fruiting. Consult a landscape professional regarding pruning, especially if the tree is near power lines.




The key to pruning is to select the correct limbs for removal and to make the proper pruning cut, called "natural target pruning."

Always cut at nodes. Nodes are where branches meet other branches or the main trunk.

Do not remove more than one-third of the foliage at any single pruning.




Always make proper cuts. Proper pruning cuts use the branch bark ridge as a guide. Start the cut next to the top and beside the branch bark ridge. Do not cut the ridge. The final cut should be at an opposite and approximately equal angle to the bark branch ridge. This will remove the target limb without damaging the branch collar, which will enable the tree to effectively compartmentalize the wound and protect itself from rot and disease.

Do not paint cuts. Wound dressings do not help the tree and can actually cause harm by inhibiting wound closure and providing a warm, moist site for decay-causing organisms such as fungi.