

URBAN FORESTRY

Tree Selection

Tree selection is one of the most important investment decisions a home owner makes when landscaping a new home or replacing a tree lost to damage or disease. Considering that most trees have the potential to outlive the people who plant them, the impact of this decision is one that can influence a lifetime. Match the tree to the site, and both lives will benefit.

The question most frequently asked of tree care professionals is “Which kind of tree do you think I should plant?” Before this question can be answered, a number of factors need to be considered. Think about the following questions:

- Why is the tree being planted? Do you want the tree to provide shade, fruit, or seasonal color, or act as a windbreak or screen? Maybe more than one reason?
- What is the size and location of the planting site? Does the space lend itself to a large, medium, or small tree? Are there overhead or belowground wires or utilities in the vicinity? Do you need to consider clearance for sidewalks, patios, or driveways? Are there other trees in the area? Are there barriers to future root growth, such as building foundations?
- Which type of soil conditions exist? Is the soil deep, fertile, and well drained, or is it shallow, compacted, and infertile?
- Which type of maintenance are you willing to provide? Do you have time to water, fertilize, and prune the newly planted tree until it is established, or will you be relying on your garden or tree service for assistance?

Asking and answering these and other questions before selecting a tree will help you choose the “right tree for the right place.”

TREE FUNCTION

Trees make our surroundings more pleasant. Properly placed and cared for, trees increase the value of our real estate. A large shade tree provides relief from summer’s heat and, when properly placed, can reduce summer cooling costs. An ornamental tree provides beautiful flowers, leaves, bark, or fruit. Evergreens with dense, persistent leaves can be used to provide a windbreak or a screen for privacy. A tree that drops its leaves in the fall allows the sun to warm a house in the winter. A tree or shrub that produces fruit can provide food for the owner and/or attract birds and wildlife into your home landscape. Street trees decrease the glare from pavement, reduce runoff, filter out pollutants, and add oxygen to the air we breath. Street trees also improve the overall appearance and quality of life in a city or neighborhood.



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FORM AND SIZE

A basic principle of modern architecture is “form follows function.” This is a good rule to remember when selecting a tree. Selecting the right form (shape) to complement the desired function (what you want the tree to do) can significantly reduce maintenance costs and increase the tree’s value in the landscape. When making a selection about form, also consider mature tree size. Trees grow in a variety of sizes and shapes, as shown below. They can vary in height from several inches to several hundred feet. Select a form and size that will fit the planting space provided.

Depending on your site restrictions, you can choose from among hundreds of combinations of form and size. You may choose a small-spreading tree in a location with overhead utility lines. You may select a narrow, columnar form to provide a screen between two buildings. You may choose large, vase-shaped trees to create an arbor over a driveway or city street. You may even determine that the site just does not have enough space for a tree of any kind.

SITE CONDITIONS

Selecting a tree that will thrive in a given set of site conditions is the key to long-term tree survival. The following is a list of the major site conditions to consider before selecting a tree for planting:

- soil conditions
- exposure (sun and wind)
- human activity
- drainage
- space constraints
- hardiness zone

Soil Conditions

The amount and quality of soil present in your yard can limit planting success. In urban sites, the topsoil often has been disturbed and frequently is shallow, compacted, and subject to drought. Under these conditions, trees are continuously under stress. For species that are not able to handle these types of conditions, proper maintenance designed to reduce stress is necessary to ensure adequate growth and survival. Many arborists will, for a minor charge, take soil samples from your yard to test for fertility, salinity, and pH (alkalinity or acidity). The tests will be returned with recommendations on ways to improve poor soil conditions with fertilizers or soil amendments (sand, compost, or manure) and will also help your local nursery or garden center recommend tree species that will do well in the soils found on your site.



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Exposure

The amount of sunlight available will affect tree and shrub species selection for a particular location. Most woody plants require full sunlight for proper growth and flower bloom. Some do well in light shade, but few tree species perform well in dense shade. Exposure to wind is also a consideration. Wind can dry out soils, causing drought conditions and damage to branches and leaves during storms, and can actually uproot newly planted trees that have not had an opportunity to establish root systems. Special maintenance, such as staking or more frequent watering, may be needed to establish young trees on windy sites.

Human Activity

This aspect of tree selection is often overlooked. The reality of the situation is that the top five causes of tree death are the result of things people do: soil compaction, underwatering, overwatering, vandalism, and the number one cause—planting the wrong tree—account for more tree deaths than all insect and disease-related tree deaths combined.

Drainage

Tree roots require oxygen to develop and thrive. Poor drainage can remove the oxygen available to the roots from the soil and kill the tree. Before planting, dig some test holes 12 inches wide by 12 inches deep in the areas you are considering planting trees. Fill the holes with water and time how long it takes for the water to drain away. If it takes more than 6 hours, you may have a drainage problem. If so, ask your local garden center for recommendations on how to correct the problem, or choose a different site.

Space Constraints

Many different factors can limit the planting space available to the tree: overhead or underground utilities, pavement, buildings, other trees, visibility. The list goes on and on. Make sure there is adequate room for the tree you select to grow to maturity, both above and below ground.

Hardiness

Hardiness is the plant's ability to survive in the extreme temperatures of the particular geographic region in which you are planting the tree. Plants can be cold hardy, heat tolerant, or both. Most plant reference books provide a map of hardiness zone ranges. Although tropical areas are generally Zone 11, higher elevations have cooler temperatures that may warrant adjustment to the hardiness zone classification. Check with your local garden center for the hardiness information for your region. Before you make your final decision, make sure the plant you have selected is "hardy" in your area.



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PEST PROBLEMS

Insect and disease organisms affect almost every tree and shrub species. Every plant has its particular pest problems, and the severity varies geographically. These pests may or may not be life threatening to the plant. You should select plants resistant to pest problems for your area. Your local ISA Certified Arborist, tree consultant, or extension agent can direct you to information relevant to problem species for your location.

SPECIES SELECTION

Personal preferences play a major role in the selection process. Now that your homework is done, you are ready to select a species for the planting site you have chosen. Make sure you use the information you have gathered about your site conditions, and balance it with the aesthetic decisions you make related to your personal preferences.

The species must be suitable for the geographic region (hardy), tolerant to the moisture and drainage conditions of your soil, be resistant to pests in your area, and have the right form and size for the site and function you have envisioned.

Remember, the beautiful picture of a tree you looked at in a magazine or book was taken of a specimen that is growing vigorously because it was planted in the right place. If your site conditions tell you the species you selected will not do well under those conditions, do not be disappointed when the tree does not perform in the same way.

If you are having difficulty answering any of these questions on your own, contact a local ISA Certified Arborist, tree care professional, garden center, or extension agent for assistance. Their assistance will help you to plant the “right tree in the right place.” It is better to get a professional involved early and help you make the right decision than to call him or her later to ask if you made the wrong decision.