Direct economic benefits are usually associated with energy costs. Air conditioning costs are lower in a tree-shaded home. Heating costs are reduced when a home has a windbreak. Trees increase in value from the time they are planted until they mature. Trees are a wise investment of funds since landscaped homes are more valuable than non-landscaped homes. The savings in energy costs and the increase in property value directly benefit each homeowner.

The indirect economic benefits of trees are even greater. These are available to the community or region. Lowered electricity bills are paid by customers when power companies are able to use less water in their cooling towers, build fewer new facilities to meet peak demands, use reduced amounts of fossil fuel in their furnaces and need fewer measures to control air pollution. Communities can also save if fewer facilities must be built to control storm water in the region. To the individual these savings are small, but to the community reductions in these expenses are often in the thousands of dollars.

Trees Require an Investment

Trees provide numerous aesthetic and economic benefits but also incur some costs. You need to be aware that an investment is required for your trees to provide the benefits that you desire. The biggest cost of trees and shrubs occurs when they are purchased and planted. Initial care almost always includes some watering. Leaf, branch and whole tree removal and disposal can be expensive.

To function well in the landscape, trees require maintenance. Much can be done by the informed homeowner. Corrective pruning and mulching will give trees a good start. Shade trees, however, quickly grow to a size that may require the services of a professional arborist. Arborists have the knowledge and equipment needed to prune, spray, fertilize and otherwise maintain a large tree. Your garden center owner, cooperative extension agent, community forester or consulting arborist can answer questions about tree maintenance, suggest treatments or recommend qualified arborists.

The PHC Alternative

Maintaining mature landscapes is a complicated undertaking. You may wish to consider a professional *Plant Health Care* (PHC) maintenance program which is now available from many landscape care companies. Their program is designed to maintain plant vigor and should initially include inspections to detect and treat any existing problems which could be damaging or fatal. Thereafter, regular inspections and preventive maintenance will assure plant health and beauty. Refer to our *"Plant Health Care"* brochure for more information.

This brochure is one in a series published by the International Society of Arboriculture as part of its Consumer Information Program. You may have additional interest in the following titles currently in the series:

- Avoiding Tree Damage During Construction
- Avoiding Tree and Utility Conflicts
- Benefits of Trees
- Buying High-Quality Trees
- Insect and Disease Problems
- Mature Tree Care
- New Tree Planting
- Plant Health Care
- Proper Mulching Techniques
- Pruning Young Trees
- Pruning Mature Trees
- Recognizing Tree Hazards
- Treatment of Trees Damaged by Construction
- Tree Selection
- Tree Values
- Trees and Turf
- Why Hire an Arborist?
- Why Topping Hurts Trees

Developed by the International Society of Arboriculture, a non-profit organization supporting tree care research around the world and dedicated to the care and preservation of shade and ornamental trees.
For further information, contact: ISA, P.O. Box 3129, Champaign, IL 61826-3129, USA
www.isa-arbor.com

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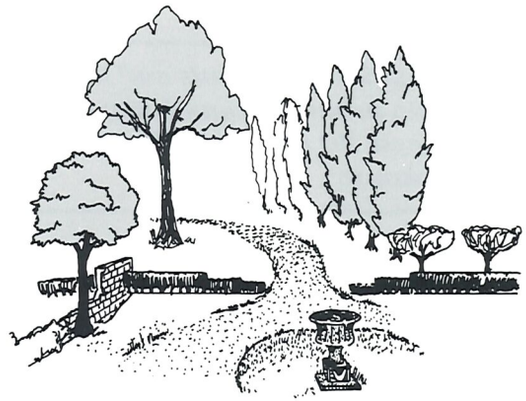
Benefits of Trees

Most trees and shrubs in cities or communities are planted to provide beauty or shade. These are two excellent reasons for their use. Woody plants also serve many other purposes, and it often is helpful to consider these other functions when selecting a tree or shrub for the landscape. The benefits of trees can be grouped into social, community, environmental and economic categories.



Social Benefits

We like trees around us because they make life more pleasant. Most of us respond to the presence of trees beyond simply observing their beauty. We feel serene, peaceful, restful and tranquil in a grove of trees. We are "at home" there. Hospital patients have been shown to recover from surgery more quickly when their hospital room offered a view of trees. The strong ties of people and trees are most evident in the resistance of community

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residents to removing trees to widen streets. Or we note the heroic efforts of individuals and organizations to save particularly large or historic trees in a community.

The stature, strength, and endurance of trees give them a cathedral-like quality. Because of the potential for long life, trees are frequently planted as living memorials. We often become personally attached to trees that we or those we love have planted.

Community Benefits

Even though trees may be private property, their size often makes them part of the community as well. Since trees occupy considerable space, planning is required if both you and your neighbors are to benefit. With proper selection and maintenance, trees can enhance and function on one property without infringing upon the rights and privileges of neighbors.

City trees often serve several architectural and engineering functions. They provide privacy, emphasize views or screen out objectionable views. They reduce glare and reflection. They direct pedestrian traffic. They provide backgrounds, or soften, complement or enhance architecture.

Trees bring natural elements and wildlife habitats into urban surroundings; all of which increase the quality of life for residents of the community.

Environmental Benefits

Trees alter the environment in which we live by moderating climate, improving air quality, conserving water and harboring wildlife. Climate control is obtained by moderating the effects of sun, wind, and rain. Radiant energy from the sun is absorbed or deflected by leaves on deciduous trees in the summer and is only filtered by branches of deciduous trees in winter. We are cooler when we stand in the shade of trees and are not exposed to direct sunlight. In winter, we value the sun's radiant energy; and because of this, we should plant only small or deciduous trees on the south side of homes. Wind speed and direction can be affected by trees. The more compact the foliage on the tree or group of trees, the greater the influence of the windbreak. The downward fall of rain, sleet and hail is initially absorbed or deflected by trees and this provides some protection for people, pets and buildings. Trees intercept water, store some of it, reduce storm run-off and the possibility of flooding. Dew and frost are less common under trees because less radiant energy is released from the soil in those areas at night.

Temperature in the vicinity of trees is cooler than that away from trees. The larger the tree, the greater the cooling. By using trees in the cities, we are able to moderate the heat island effect caused by pavement and buildings in commercial areas.

Air quality can be improved through the use of trees, shrubs and turf. Leaves filter the air we breathe by removing dust and other particulates. Rain washes the pollutants to the ground. Leaves absorb carbon dioxide from the air to form carbohydrates that are used in the plant's structure and function. In this process, leaves also absorb other air pollutants such as ozone, carbon monoxide, and sulfur dioxide and give off oxygen.

By planting trees and shrubs, we return to a more natural, and less artificial environment. Birds and other wildlife are attracted to the area. The natural cycles of plant growth, reproduction and decomposition are again present, both above and below ground. Natural harmony is restored to the urban environment.

Economic Benefits

Property values of landscaped homes are 5- 20% higher than those of non-landscaped homes.

Individual trees and shrubs have value, but the variability of species, size, condition and function makes determining their economic value quite difficult. The economic benefits of trees can be both direct and indirect.