# 5 Landscaping

Landscaping should be included in your long-term plan for reducing heating and cooling costs. If your home is presently subject to glaring summer sun or blustery winter winds, you could see substantial savings from a well-crafted landscape.

Your plantings can also improve your privacy, reduce street noise, and control dust. Add these benefits to the beauty of mature landscaping, and it's no surprise that the presence of trees and shrubs can raise a home's resale value by 10 to 20 percent.

In this chapter, we illustrate the timeless principles of good landscape design. We show you how to choose trees and bushes that will thrive in your climate, and the best ways to plant them. We also include maintenance tips to assure that your plantings will increase in value over time.

# **EVALUATE YOUR LANDSCAPING**

Do you have trees and shrubs already growing on your property? Are they evergreen or do they shed their leaves? What are their shapes? Your landscape plan will have to incorporate the existing plantings around your home.

Does your home overheat in summer? Are some rooms hotter than others? You may be able to reduce your heating costs by planting trees or shrubs so they shade the hottest parts of your home.

Is your home located in a region where it is hot and windy in summer? You may be able plant hedges that direct cooling breezes toward your home.

Is your home located in a region where it is cold and windy in winter? You may be able to plant a windbreak to shelter your home from cold winds.

Where is the sun's daily path over your home, and how does this path vary over the seasons? You may be able to design plantings that shelter your home from hot summer sun, while still allowing the welcome sun of winter to reach your home.

Does the ground slope away from your home or toward it? You should design your landscaping to protect your home's foundation from water.

# LANDSCAPING BASICS

The benefits of landscaping are substantial and welldocumented. Studies by the U.S. Department of Agriculture and Department of Energy illustrate how carefully positioned trees can reduce an average household's energy consumption by 20 to 25 percent, saving \$300 to \$400 each year.

Landscaping also has important positive environmental effects. Plants consume carbon dioxide and water through photosynthesis. This carbon is stored, or sequestered, in the plant itself and in the surrounding soils. Since carbon dioxide is a potent greenhouse gas that contributes to climate change, improving your landscaping also reduces your carbon footprint.

# **Summer Benefits**

The shade cast by landscaping will typically reduce your home's summer air-conditioning costs by 15 to 50 percent. The savings may be up to 75 percent for small mobile homes. The savings are the greatest in hot climates and for homes with little existing shade.

You may have noticed that parks and forests are always cooler than nearby city streets. This is because trees block sunlight before it can reach the ground, and their canopies of leaves release cooling water vapor through a process called evapotranspiration.

Several studies show that summer daytime air temperatures in neighborhoods with mature tree are 3° to 6°F lower than in newly developed areas with no trees, and that large urban parks are up to 7°F cooler than surrounding neighborhoods.

Planting trees may be ten times more cost-effective than building new electrical generating plants to meet summer cooling demands. A 1992 study by the Lawrence Berkeley Laboratory estimated that building new power plants to meet electrical peak loads (such as those caused by air conditioners running on summer afternoons) cost an average of 10 cents per kilowatt-hour. The study showed that decreasing peakload consumption by planting trees cost only 1 cent per kilowatt-hour. The numbers may have doubled since then, but the 10-to-1 ratio is still accurate.

The effectiveness of landscaping in reducing the cost of cooling your home will depend on several factors:

- The temperature of your summer weather.
- The color and reflectivity of your roof and walls.
- The number and size of windows on the sunny sides of your home.
- The amount of insulation in your attic.

If your home is located in a hot part of the world, and has large south-facing windows and a darkcolored roof, you'll have the greatest need for summer shading. If you live in the North and you rarely need air-conditioning, the shade cast by your plantings will be less significant.

#### **Winter Benefits**

Landscaping can also reduce your energy costs in cold weather. Landscaping that creates a windbreak can reduce your winter heating bills by up to one-third.

Moving air carries heat much more quickly than still air. Wind blowing on your home will cool its exterior surfaces, causing heat inside the home to conduct through the walls and other surfaces more quickly. Wind will also work its way through cracks and other openings in the home's shell, causing drafts and driving up heating costs.

Owners of rural homes have long recognized this principle when designing shelter breaks around their buildings. One study conducted in South Dakota found windbreaks to the north, west, and east of houses cut fuel consumption by an average of 40 percent. With a smaller windbreak on only the windward side, the houses still consumed 25 percent less fuel than similar unprotected homes. An Oklahoma study found that a tall evergreen hedge on the north side of a house reduced that household's fuel consumption by 10 percent during lighter winds and more than 30 percent during high winds.

The effectiveness of landscaping in reducing the cost of heating your home will depend on these factors:

- The coldness of your winter weather
- The draftiness of your home
- The windiness of your site

#### Winter Landscaping Design



Design your landscaping to create an energy-saving microclimate around your home. To get the full benefit of solar heating, design your landscaping to allow full access to winter sun.

#### Summer Landscaping Design



Plant tall deciduous trees 5 to 15 feet away from the southfacing side of your home to block solar heat from high in the summer sky. Plant wide trees 10 to 30 feet away from the home's west side to block low-angle solar heat during hot summer afternoons. If you live in a drafty home out in the open in the far north, for example, you'll receive the most wintertime benefit from landscaping. You will benefit less if your home is well-sealed, sheltered by structures or trees, and located in a warm winter climate.

In all cases, whether you landscape to improve your home's efficiency in winter or summer, your landscaping will add value to your home and reduce your carbon footprint. It's always a good idea to spend time and money improving your landscaping.

## **Recognizing Your Microclimate**

The climate in close proximity to your home is called its microclimate. If your home is located on a sunny southern slope, for example, it may have a warm microclimate, even though you live in a cool region. If you live in a hot and humid region, your home could still be situated in a comfortable microclimate due to dense shade and cool breezes.

Certain plants may do well in your microclimate, while others languish and never thrive. This could depend on the type of soil, amount of shade, and local ground moisture. To help assess these local factors, locate a trustworthy nursery tree specialist, county extension agent, landscape architect, or landscape contractor to help you choose appropriate plants and plant care. This knowledge is invaluable when it comes to planning and maintaining landscaping, and provides a good reason to choose full-service professionals rather than discount retailers.

# **CLIMACTIC REGIONS**

North America encompasses five climatic regions that are generally described as temperate, hot-arid, hothumid, cool, and cold. In interpreting the effect of your general climate on your home, you should also consider the effect of your microclimate. A highelevation north-facing site, for example, may have the climatic characteristics of a region many hundreds of miles to the north. The energy-conserving landscape strategies you employ will be different for each of these regions.

# Temperate

In most of the temperate region, you need to consider both the heating and cooling seasons. Seasonal winds can be expected in any season, and periods of high humidity are common.

- Create shade during summer by planting deciduous trees that will cast deep shadows on the home during midday. Choose tall trees with open trunks that allow the low winter sun to warm your home.
- Plant windbreaks that will deflect cold winter winds. Keep them far enough from your home to allow air circulation in summer.

# Hot and Arid

This region has clear skies, dry air, and long periods of hot weather. Evenings are often cool, with large daily temperature fluctuations.

- Plant drought-resistant trees to shade walls and windows. They will also cool the air by evaporation from their foliage.
- Design plantings so natural breezes reach your home. Tall shade trees with open trunks, for example, will allow ground-level circulation.

# Hot and Humid

This region has high temperatures and consistent high humidity. Wind speed and direction varies.

- Allow cooling summer winds to reach your home. Don't plant dense hedges near your home that will block breezes.
- Minimize humidity around your home. Don't plant trees or shrubs against your foundation that will require watering.
- Plant tall trees that will have spreading canopies and branchless lower trunks to maximize shade without interfering with air circulation around the home.
- If you live in a hurricane zone, select trees that can survive high winds.

# Cool

This region has warm summers and cold winters. These locations receive less solar heating than southern areas.

- If you have a large lot, plant dense windbreaks of mixed conifer and deciduous bushes on the windward side of your home to protect it from cold winter winds.
- Shade your windows from direct summer sun. Focus on west-facing and south-facing windows in rooms that overheat in the afternoon.
- Design your landscaping so winter sun can reach south-facing windows.

# Cold

This region has cool summers and very cold winters. Homes do not need cooling. Landscaping efforts should be directed at protecting your home from severe cold weather.

- If you have a large lot, plant dense windbreaks of mixed conifer and deciduous bushes on the windward side of your home to protect it from cold winter winds.
- Design your landscaping so winter sun can reach your south-facing windows.

Landscaping Climate Regions for U.S and Canada



ate zone, for example, your local microclimate may be most similar to the cool region.

# **CREATING SHADE**

Providing shade in the summertime over the sunniest parts of your home can reduce the cost of keeping your home cool. Solar energy that heats your roof and shines through your windows is the main reason that people resort to using air conditioners. Shading is the most cost-effective way to reduce solar heat gain.

In most regions, you can find landscape trees in sizes, densities, and shapes to fit almost any shading application. Nature accommodates our preference to block solar heat in summer and let it in during the winter with deciduous trees or shrubs. These shed their leaves in winter to allow passage of the sun's warm rays.

A tree can reduce incoming solar radiation by 25 to 60 percent, depending on the density of its foliage. Tall deciduous trees with a spreading canopy can be planted to the south, southeast, and southwest of your home to provide maximum shading from the summer sun. Shorter, broader trees are more appropriate to the east, and to the west where shade is especially needed from low-angle sun on hot afternoons.

A 10-foot deciduous tree planted near your home will begin shading nearby windows during its first year. Depending on the species and the home, the tree will shade the roof in 5 to 10 years. A single tree, located to provide shade during the afternoon, may reduce wall and roof temperatures as much as 20° to 40°F. An alternative to a single large shade tree with wide limbs is a row of narrow trees planted relatively close together.

A faster-acting option is to plant greenery closer to the building. Vines can provide shade to foundations and walls beginning with the first growing season. Either a trellis with climbing vines or a planter box with trailing vines will block the sun while allowing cooling breezes. Both annual vines (such as runner beans, sweet peas, and morning glories) and perennial vines (such as Virginia creepers or honeysuckles) serve this purpose well.

#### Shade and Microclimate



Shading with a Trellis



A plant-covered trellis can cool your house or a patio by creating a shaded buffer zone. This is especially useful if you have just one or two windows that cause overheating.

# **CREATING WIND PROTECTION**

Besides providing shade in the summer, well-planned landscaping can also decrease your heating costs in the winter as windbreaks. A windbreak of trees and shrubs will reduce wind speed for a distance of up to thirty times the windbreak's height.

The best trees to block winter winds are evergreens planted on the windward side of your home. If your home's entryway faces cold winter winds, consider planting evergreen shrubs nearby to shelter it from winter's blasts.

Shrubs and vines planted next to your house (such as the trellises and low landscaping covered in the shading section) can also reduce heating costs by creating a dead air space that insulates your home in the winter.

Plant shrubs and vines so there will be at least a foot of space between the full-grown shrub and the house wall. In regions where the soil tends to be wet, foliage that's allowed to grow near your home can inhibit the drying action of the wind and sun. Irrigating against the side of a home can also lead to moisture problems. In damp locations, the best landscape design allows wind to flow around the home to keep the soil reasonably dry.

Be careful when planting evergreens on the south side of the house so they don't obscure winter sun. If winter winds from the south are a problem in your area, plant evergreens far enough away from your dwelling that they lift cold winds up and over the house without shading it.

# PLANNING YOUR LANDSCAPE

The next step toward designing the right landscaping is to draw a simple sketch of your yard. Include all the buildings, walks, driveways, and utilities such as water, sewer, electric, gas, and telephone lines. Identify the potential uses for different areas of your yard: vegetable gardens, flower beds, patios, play areas, clothes line, and so on.

Draw arrows to show sun angles and prevailing winds for both summer and winter. Using different colored pencils or felt-tipped markers may help. As you sketch, circle the areas of your yard that need shade and/or protection from wind.



Altering Wind Patterns in Your Microclimate

Paving near your home reflects or radiates solar heat onto the walls and windows. Note the location of all paved surfaces near your home, such as streets, driveways, patios, or sidewalks.

You may want to obscure a nearby house or street light, yet maintain distant views. Draw arrows to show how you want views to be maintained, screened, or framed. Mark routes of noise pollution you wish to block. Highlight areas where landscaping height or width may be restricted, such as under utility lines or along street corners.

The more you identify your goals and familiarize yourself with your yard's features—current and proposed—the more your landscaping projects will succeed. Your sketch will also help you communicate with landscape professionals.

Large expanses of lawn aren't necessary for a pleasing landscape. Lawns provide great areas for kids to play and families to relax. But areas not intensively used by people can be converted to a landscape of trees, shrubs, and perennials. You could cover some areas with an organic mulch, such as bark chips, or mineral covering such as gravel or scoria. Removing the lawn will reduce your water consumption. The new trees will provide a cooler microclimate.

If you need more shade, wind protection, or privacy, consider planting a living fence of dense trees and shrubs. Your living fence can provide an acoustic barrier, visual screening, windbreaks, food for your family, or wildlife habitat. And, once established, many living fences require less maintenance than conventional ones.

#### **Nurseries and Landscape Specialists**

The staff at your local nursery is often your best resource for planning and executing new landscape designs. They should know about area growing conditions from experience. They'll usually escort you through their lots for hands-on comparisons of different plant stock and ask questions about your landscape plans. Take a sketch of your yard to the nursery with you to get the most out of your visit. For major purchases, a nursery representative may even visit your property to discuss your planting options.

Local landscapers are always proud of their work, and should be happy to provide references or the locations of some of their completed jobs. Their field experience is valuable for answering specific questions about site planning and microclimate. Landscapers may be knowledgeable about hastening plant growth, landscape maintenance, and disease prevention, too. These specialists can also offer advice about efficient and convenient watering systems, such as drip irrigation.



Winter Wind Deflection by Windbreaks

Although there are exceptions, chain stores or temporary nurseries in hardware or grocery stores are generally not your best source for hardy plant stock and accurate information. Through no fault of their own, the staff of these businesses is frequently ill-prepared to accurately answer the questions of a conscientious home landscaper. The plants sold by these mass retailers often come from far-flung nurseries in climatic regions that are vastly different than yours. This may be harmless if you are buying annuals such as vegetables. But the trees and shrubs you purchase from most nurseries and other providers will be 2 to 10 years old, and they will have adapted to the climate in which they were raised. They may be short-lived at your site, and they may even be of a variety that is completely inappropriate in your region. Shop locally for healthy and hardy nursery stock.

Sample Site Analysis for Hot Dry Region

# SELECTING TREES AND SHRUBS

Trees and shrubs have a life span of many years. Ideally, your landscape improvements become more attractive and functional with age. But poorly planned landscaping can deteriorate over time and cause maintenance problems.

Every species of tree and shrub has its pros and cons. Ask these questions, whether you are interviewing a landscaping professional or doing research to identify the best plants for your application:

- Where is this plant from? Is it hardy in my area's climate? During what season should I plant it?
- Will this plant grow well in the soils around my house?
- How much shading will this plant provide? How well will it shelter the house from winter winds?
- What is this plant's growth rate and life expectancy? Is it the right size and shape for the space I have? What is its mature crown size or root ball size?



This home tends to be overheated by afternoon sun on the south and west sides. New plantings here will reduce air conditioning costs.

Sample Site Analysis for Hot Humid Region

will benefit from midday shade. Keep shrubs away from the foundation on the low-lying east side to

encourage air circulation.

- Will this plant infringe on nearby structures and walks? Could it interfere with overhead lines, underground pipes, or traffic visibility?
- Does this plant offer edible nuts, berries or fruits? Will it attract desirable birds and wildlife?
- How much maintenance and watering does this plant require? Does it have any specialized pruning needs? How well does it tolerate pests and diseases?

## **Localized Landscaping**

Your best landscaping options are plants adapted to your particular region. Localized landscaping includes vegetation appropriate to a particular site's climate, moisture, and soils.

Whether the species is a native or an import, the best predictor of performance is the plant's history of success or failure in your region. Locally grown "hardy" stock is your best bet (some nurseries will guarantee the survival of only local species). Imported stock and untested exotic species could create continual demands on your time, money, water, and patience.

In many regions, water shortages are an increasing problem. If you utilize a municipal supply, you may see increasing water costs. Choose your landscaping with water in mind. If water supply is a concern in your area consider xeriscaping, which is landscaping that does not require supplemental irrigation beyond what naturally occurs in your area.

## **Basic Tree Forms**

When selecting shade trees for your property or community, consider how the tree form, density, and mature size will relate to your garden and house. Will the new tree grow tall enough to shade your roof? Will it also shade your garden? How will the trees you plant today affect your view in ten years?

**Fastigiate** These are narrow trees that taper to a point, such as the Lombardy poplar or the fastigiate Washington hawthorn. When planted in lines, fastigiate trees are excellent screens or windbreaks. They are usually fast-growing, gaining 3 to 5 feet a year to pro-

vide quick cooling results. Fastigiates also work well closer to buildings, where a spreading tree would require constant pruning.

**Columnar** These are extremely narrow trees that lack a pointed tip, such as the sentry maple or columnar red maple. Columnars are good for narrow sites. They provide excellent shading for rooftops when planted close together in a line or grove. They are also good for planting further to the west and southwest, since their height allows them to shade house roof and walls from afar.

**Spreading** Spreading trees, such as the sugar maple, tend to grow wider than their height. They require ample space and are especially good for shading walls and roofs. Although a spreading tree works well when planted as a single shade tree, when several are planted in a grove they provide a cool microclimate.

Weeping These are trees with pendulous branches, such as the weeping willow or the weeping birch. Weeping trees work well where shade is desired close to the ground and where space is not limited. They are also very attractive when silhouetted against a background of evergreen trees.

**Open Headed** These are trees with a loose branch structure and an indistinct silhouette, such as the silk tree, the honey locust, or the flowering dogwood. Since they provide scattered shade, open-headed trees may be good for the east side of your house. This placement allows some morning light to reach your windows. Open-headed trees are good lawn trees, since their open foliage allows filtered sunlight to reach grasses and shrubs below.

**Round Top** Round-top trees, such as the white oak or the sycamore, have a distinctly round profile. They usually require plenty of room for their crown to grow. A round-top tree is good when you can plant only a single tree. The lower canopy of a round top tree can be pruned to allow cooling breezes, while its upper canopy provides shade to a house's windows, walls, and roof.

**Pyramidal** These are trees with an almost conical outline, such as the Douglas fir, the magnolia, or the acacia. Some pyramidals, such as the Douglas fir, can be used for tall hedges or windbreaks.

#### The Variety of Tree Forms



As you craft a landscape plan, be sure to consider the shapes of trees that are planted in your area. Take advantage of how they cast shade, control wind, block obstructions, and frame your view in both summer and winter.

# **Tree and Shrub Growth**

A slow-growing variety of tree may require many years of growth before it provides adequate shade for your roof, walls, and garden. Fast-growing species will provide the desired shade in less time. But keep in mind that trees with fast growth rates are generally not as long-lived as trees with moderate to slow growth rates. In addition, trees with fast growth rates may have less rooting depth or less resistance to branch breakage during wind storms or heavy snow loads. These are important considerations when you are choosing trees to place near structures.

Selecting the right shrubs and planting them appropriately is also important. When planting shrubs close to the house, be sure to learn how large the mature shrub will be. Place them with at least a foot of space between the full-grown shrub and the wall of the home. They may look a little lonely at first. But planning ahead will prevent overcrowding in the future.

# **Buying Trees and Shrubs**

Follow these inspection tips at the nursery to be sure you buy healthy, undamaged trees and shrubs:

- Look at the bark to tell if the tree has been handled carefully during growing, digging, and shipping. Scrapes and bruises could provide an entry point for infection or rot.
- If you're buying bare-root plants, look for broken or damaged roots.
- On balled-and-burlap-wrapped plants, check to make sure the ball is well-packed, so the roots are not exposed to air.
- Look for broken or damaged limbs. Minor damage may not be a problem if it can be easily pruned off.
- Look for indications of insects or disease such as cocoons, egg masses, cankers, or lesions.

Keep nursery plants well watered. With bare-root plants, be sure to keep the tiny hair-roots damp at all times. They will not survive if these roots are allowed to dry out.

Balled-and-burlap plants should be handled gently. Don't just drop them out of a truck—use appropriate machinery if necessary to unload and place large balled-and-burlap-wrapped plants.

# PLANTING TREES AND SHRUBS

When your plants arrive, store them in a cool, shady place until you can plant them. Do not ever allow them to dry out—keep them well-watered until they go back in the ground.

The process of transplanting causes trauma to the plant, and is best handled carefully. If possible, plant on a cool or overcast day. Hot sun stresses plants by requiring a flow of water and nutrients to the foliage that the traumatized plant may be incapable of providing. If you must plant during hot or sunny weather, try to do so in late afternoon or evening.

**Tree-Planting Basics** 



#### Planting

Put a little topsoil in the bottom of the pit. Remove the potted plant from its container, gently freeing its roots. Place the tree or shrub in the hole so its root ball sits evenly. Make sure the plant's original soil line remains at ground level or a little above. Gently fill the area around the root ball to remove air pockets.

If you are planting a bare-root plant, be sure your hole accommodates all the roots without crimping. Build a small cone of soil at the bottom of the hole. Lay the bare roots over the cone and carefully fill around the roots to remove air pockets.

If you are planting balled-and-wrapped stock, leave the burlap around the ball to reduce trauma to the roots. Slit the burlap in a few places to help the roots grow into the surrounding soil as soon as possible. The burlap may be reinforced with twine, which is tied to the trunk. If so, cut the twine when the tree leafs out in the spring.

Fill around the root ball with soil. Flood the hole and root ball with a hose, using a digging bar or crow bar to create holes for the water to penetrate through the fill dirt to the bottom of the filled hole. Gently tamp the tree pit. The water forces air to the surface, ensuring that all roots are in contact with soil.

Build a watering basin around the new tree that is four to six inches high. Make this basin wider than the diameter of the root ball.

After a few initial soakings, most trees and shrubs will need weekly watering during their first growing season. Keep a careful eye on your new plants. If a tree or shrub wilts during the hot part of the day, the root ball is not getting enough water.

#### Mulching

To help retain root moisture and reduce weed intrusion, cover the ground around the new planting with 4 inches of mulch. Use organic materials such as old leaves, bark, or aged sawdust or wood chips. Don't use peat moss as a mulch since it acts as a sponge instead of letting the water through to the plant. If you use grass clippings, make sure they are brown. Green grass clippings heat up the soil during decomposition and rob it of nitrogen.

## Wrapping

With most young trees, it is a good idea to wrap their trunks to prevent sun scalding in summer and, in cold climates, frost damage in winter.

Wrap the trunk with rolled paper wrap available from nurseries. Start at the bottom and wrap upward so each layer will shed moisture rather than trapping it. Remove the wrap the following spring without fail to avoid girdling and to allow the trunk to expand as it grows. Ask your nursery or landscape specialist for more information.

## Staking

If the new tree is in an area of high winds or heavy traffic, or if it is top-heavy, you may need to support the tree by staking or guying. Newly established roots may break as an unsupported tree trunk twists in the wind. If the tree is in a public place such as a front yard, staking will also provide some protection against vandalism. Use two stakes opposite each other or three guy wires at equal angles around the tree. Remove the stakes after a year. Otherwise they become a crutch and the tree may not build sufficient trunk strength.

# **TREE CARE**

Once established, trees need only moderate care. But regular watering, fertilizing, and pruning can help keep them in optimal health.

# Watering

Consult your local nursery for advice about watering your plants. Don't just spray the surface—shallow watering promotes shallow roots. Occasional deep soakings develop sturdy roots that will better withstand drought. For shrubs planted near the home, be sure to limit watering to just what is needed since excess water can damage the home's foundation. For the most efficient watering, consider installing a drip irrigation system.

# Fertilizing

Spring is the best time to fertilize your trees. Trees in dire need of fertilizer have small leaves or slightly discolored leaves. If you fertilize your lawn, trees located there may need no fertilizer.

The best fertilizing method is to create holes ten- to twenty-inches deep and an inch wide in concentric rings around the perimeter from three feet away from the trunk to one-and-a-half times the diameter of the crown. Pour liquid or granular fertilizer into the holes. In sandy soils, apply half as much fertilizer twice as often to reduce loss of fertilizer to run-off.

It's best to fertilize when the soil is relatively dry because spring rains or deep watering can then carry the fertilizer downward.

## **Pruning**

Your new tree or shrub was probably pruned at the nursery and most likely does not need pruning for the first year or two. In general, newly transplanted trees and shrubs need all their existing foliage to support the establishment of new roots.

After the first year or two, you can prune for shaping. Pruning unproductive branches may also help a tree or shrub establish its root system by redirecting the flow of nutrients. Although you can prune most species any time of the year, some species are harmed by spring pruning. Ask your nursery or landscape specialist.

Be careful when pruning. Do some research first, and don't start pruning away at a plant until you understand the principles involved. When cutting large branches, don't just cut downward on the branch because this could tear the bark off the bottom of the branch when the limb falls. The best way is to make an undercut a foot or so out from where you want the final cut. Complete the cut from the top and let the limb fall. Then go back to make a clean cut at the final location.

Don't cut branches off flush to the trunk. Instead, leave the healing collar where the branch meets the trunk. Cut just a little outside of that collar. On smaller branches, cut just ahead of a bud so the new growth which will emerge from that bud doesn't leave a stub.

Disinfect your pruning tools between cuts by dipping them in a solution of one part bleach to four or five parts water. This will help prevent the spread of diseases such as fire blight.

# THE BOTTOM LINE

Your attention to landscaping will produce benefits that go beyond energy efficiency. It's worth your efforts to craft a landscape that is both beautiful and bestows long-term energy benefits.

• Identify the rooms in your home that tend to overheat in summer. Consider whether your yard

could accommodate plantings that would cast shade on the walls and windows of these rooms.

- Identify the rooms in your home that tend to be the most drafty when the wind blows in winter. Consider whether your yard could accommodate plantings that would buffer winter winds on this side of your home.
- Look over your current landscaping and determine how your existing plantings improve your home's efficiency in summer and winter. Develop a landscape plan that integrates these existing plantings.
- Schedule maintenance for your existing plantings that includes pruning, fertilizing, and watering.