

Energy-efficient landscaping

Solar heat absorbed through windows and roofs makes your air conditioner work harder and gobble up more electricity. But incorporating shading concepts into your landscape design can help reduce this solar heat gain—and your cooling costs.

Shading from trees can reduce surrounding air temperatures as much as 9° F. Because cool air settles near the ground, air temperatures directly under trees can be as much as 25° F cooler than air temperatures above nearby blacktop.

Trees can be selected with appropriate sizes, densities, and shapes for almost any shading application. To block solar heat in the summer but allow much of it in during winter, plant deciduous trees. To provide continuous shade or block heavy winds, use

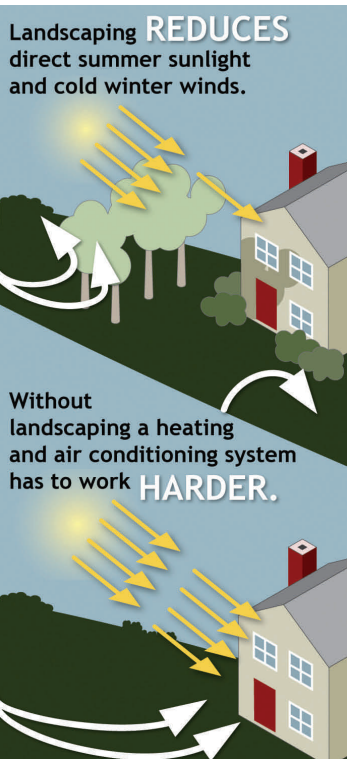
dense evergreen trees or shrubs.

Deciduous trees with high, spreading crowns (leaves and branches) should be planted on the south side of your home to provide maximum summertime roof shading. Trees with crowns lower to the ground are more appropriate to the west, where shade is needed from lower afternoon sun angles. Trees should not be planted on the southern sides of solar-heated homes in cold climates because branches will block some winter sun.

Although a slow-growing tree may take many years before it shades your roof, it will generally live longer than a fast-growing tree. Also, because slow-growing trees often have deeper roots and stronger branches, they are less prone to breakage by windstorms or

heavy snow loads. Slow-growing trees can also be more drought resistant than fast-growing trees.

A 6-foot to 8-foot deciduous tree planted near your home will begin shading windows the first year. Depending on the species, the tree will shade the roof in five to 10 years. If you have an air conditioner, shading the unit can increase its efficiency by as much as 10 percent.



Trees, shrubs, and groundcover plants can also shade the ground and pavement around the home. This reduces heat radiation and cools the air before it reaches your home's walls and windows. Use a large bush or row of shrubs to shade a patio or driveway. Plant a hedge to shade a sidewalk. Build a trellis for climbing vines to shade a patio area.

Vines can also shade walls during their first growing season. A lattice or trellis with climbing vines, or a planter box with trailing vines, shades a home's perimeter while admitting cooling breezes to the shaded area.

Shrubs planted close to the house will fill in rapidly and begin shading walls and windows within a few years. However, avoid allowing dense foliage to grow immediately next to a home, since the resulting humidity will create maintenance-related problems. Well-landscaped homes in wet areas allow winds to flow around the home, keeping surrounding soil reasonably dry.

A well-designed landscape not only adds beauty to your home, but it can also reduce heating and cooling costs. On average, landscaping for energy efficiency provides enough energy savings to return an initial investment in less than eight years.

Source:
U.S. Department of Energy

Remember to keep any trees you plant well away from any overhead power lines as a safety measure.

Tree Planting Guide

