

### Energy efficient landscaping

**D**ear Jim: My parents' yard has many trees and, I might be crazy, but their air conditioner seems to run less than ours. I know it takes years for trees to grow, but can you give me some tips on where and what kind of trees to plant? - Sandra H.

**D**ear Sandra: It may not be just your imagination your parents' air conditioner runs less because of having trees in their yard. The Department of Energy (DOE) has done sophisticated computer models showing properly placed mature trees can cut your utility bills by up to \$250 per year in a temperate climate.

Keep in mind, there are many factors about a house which impact the utility bills, with landscaping being just one of them. Older people, such as your parents, tend to feel colder, so they often don't set their air conditioner thermostat as low as a younger family with children. The type and efficiency of the central air conditioner also impact how much electricity it uses.

There are many other benefits from landscaping your yard with the proper type and placement of trees. By shading your house, the walls, shingles and even curtains, will last longer because the sun's damaging ultraviolet rays are blocked. The air immediately around your home will be less polluted and the oxygen level will be higher from the plant's photosynthesis. Trees also create an effective sound barrier from road noise and the rustling of leaves in a breeze can be relaxing.

People often think of shading the house as the primary cooling effect, but trees also function as natural air conditioners through a process called evapotranspiration. As the tree roots draw water from the ground and the leaves on trees give off this water in the form of water vapor, they cool the air similarly to how our own perspiration cools our skin.

The air temperature near the house on a well-landscaped yard can be 10 degrees cooler than on a treeless one. A smaller temperature difference between indoors and outdoors reduces the heat gain through the walls and thus reduces the load on the central air conditioner.

Also, by keeping the air around the air conditioner outdoor unit cooler, its efficiency is increased.

The key to efficient landscaping with trees is selecting the proper species and placing them in the proper location for your specific climate. A well-landscaped efficient yard in the hot, dry Southwest will look totally different from one in humid Georgia or in the Plains. The uncomfortable hot summer sun shines on a house from a different angle in southern regions of the country than in northern regions.

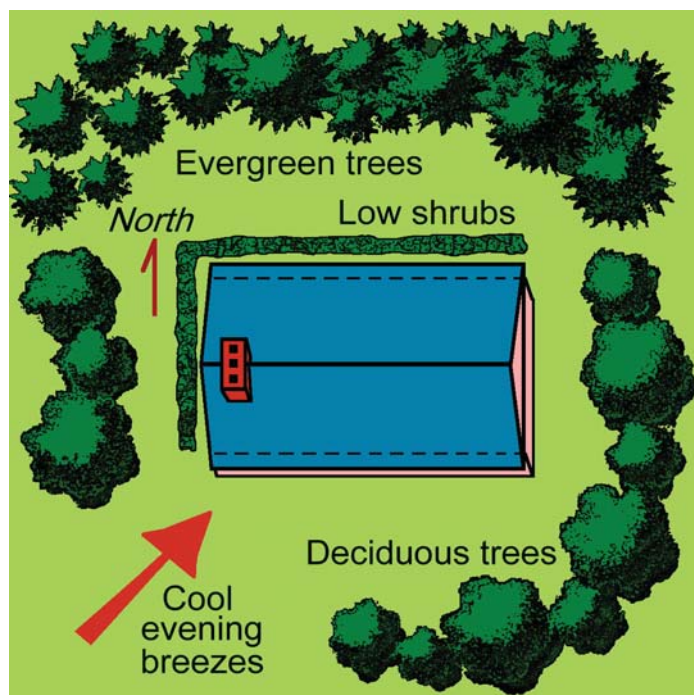
First, draw a layout of your yard and decide where you want to add some trees to landscape for your type of climate. Also determine the height, shape, type (evergreen or deciduous) of the mature trees and their growth rates. Next, talk with a local garden store expert to make sure you are planting trees which will thrive in your climate zone. Trees from northern climates may survive in climates several zones warmer. Generally though, the opposite is not true because the cold will often kill warm-climate trees.

In temperate and northern climates, you will also be concerned about winter heating bills.

In these regions, you want the warm winter sun to shine on your house and in your windows for free passive solar heating. This is best accomplished by planting deciduous trees on south, east and west sides leaving a small gap to the southwest for summer breezes. During winter with the leaves gone, much of the sun will shine through. Since the sun never shines from the north during winter, plant evergreens on the north side for a winter wind-break.

In a hot, humid climate, you air condition more often than in other climates. Natural breezes can be somewhat helpful during the evening, but because they tend to be overly humid, it is not as helpful as in temperate climates. Shading by placing tall trees to the south side is most important. Avoid an overabundance of plantings, particularly near the house, because they will raise the humidity level without the cooling effect.

In hot, dry climates such as the Southwest, planting trees to shade the walls and roof is critical. Tall trees with a high canopy are most effective in blocking the sun. Lower plantings placed near the house are good because, with the very dry air, the evapotranspiration process can create a significant cooling effect. Use non-reflective ground cover near the house,



such as wood chips, which do not hold much heat after the sun goes down.

Write James Dulley, Rural Montana, 6906 Royalgreen Dr., Cincinnati, OH 45244 for (instantly download - [www.dulley.com](http://www.dulley.com)) Utility Bills Update No. 438 - showing diagrams of landscaping layouts for four climates, selector guide of 100 trees listing heights and shapes, growth rates, hardiness zones and tree care/pruning tips. Please include \$3.00 and a business-size SASE.