



Landscaping for Energy Efficiency

By Tom Lienhard, PE, CEM

With the advent of mechanical cooling and heating, we often design and build our homes without thinking about the impact trees and landscaping can have in helping us save energy year round.

But, a well-planned landscape can reduce an unshaded home's summer air conditioning costs by 15% to 50%, according to the National Renewable Energy Laboratory. Strategically placed shade trees offer the best benefit when you:

- Plant deciduous trees, which provide shade and block heat during hotter months. By dropping their leaves in the fall, they admit sunlight in the colder months.
- Place them on the south and west sides of buildings.
- Shade all hard surfaces, such as driveways, patios and sidewalks, to minimize landscape heat load.

Evergreens retain leaves/needles yearlong, so plant them in a planned pattern. They will serve as windbreaks, saving from 10 to 30 percent in energy used for heating. Evergreens offer the best benefits when you:

- Place them to intercept and slow winter winds, usually on the north side of your home.
- Do not plant them on the south or west side of your home because they will block warming sunlight during the winter. Evergreens also provide some shading benefits during summer.

Also, shading your air conditioning unit can increase its efficiency by up to 10 percent, but make sure to allow for adequate air flow. Trees, shrubs and groundcover can also be planted around parking places and paved areas to cool the air before it reaches your home's windows and walls.

Check with your local conservation district or arborist on programs for tree planting. Local nurseries and greenhouses can provide information on the best trees to plant in your area, and check with your local utility on planting appropriate trees near power lines. Additional information is available at the National Renewable Energy Laboratory web site at www.nrel.gov/docs/legosti/old/16632.pdf.

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