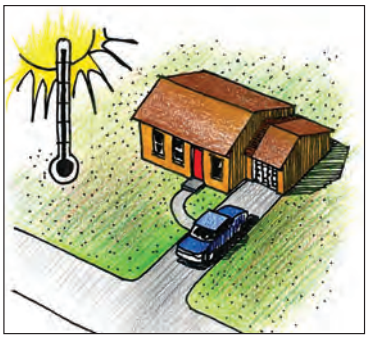
Guideline #1: Plant Trees to Shade Your Home

What you should know – Trees shading a home can reduce the need for air conditioning. Carefully placed trees can save up to 25 percent of an average household's energy needs for cooling - up to 65 percent in the case of mobile homes. According to the U.S. Department of Energy, proper placement of only three trees can save the average household up to $250 in energy costs each year. Think about what fun things your family could do with that extra money!

What you can do – The most energy savings and the best use of shade generally comes from deciduous, broadleaf trees planted about 10 to 20 feet from the walls to the west, east or south of the house, depending on the species. These trees shade the house during the summer, reducing the energy needed for air conditioning. When they lose their leaves in the winter, trees correctly planted allow the sun to reach and warm the house, saving energy for heating as well.



A lack of trees around houses means less comfort and higher energy costs.

Carefully planned trees annually save money and add comfort to a home.

2 Main Types of Trees

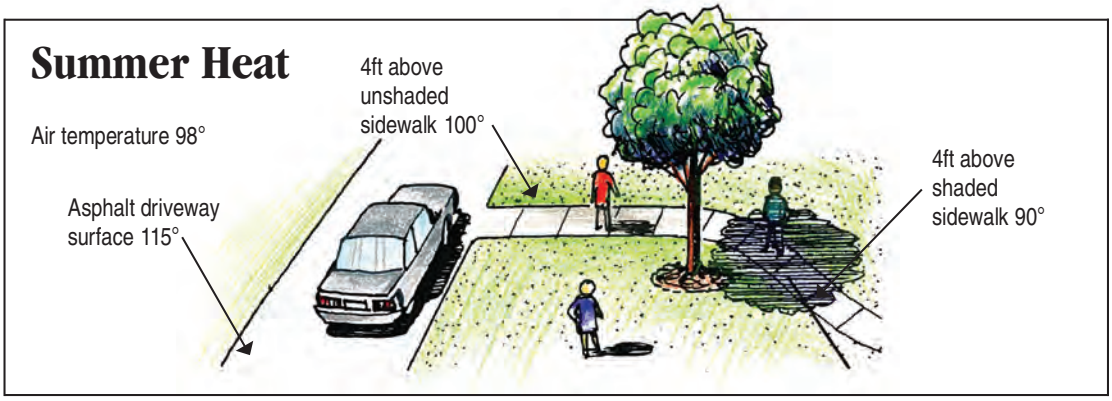
Different kinds of trees can be part of an energy wise plan.

Broadleaf trees have leaves that are flat and thin. They are usually deciduous, shedding their leaves annually. Oak, ash, and maple are several examples of broadleaf trees. Broadleaf trees generally provide the best summer shade.

Conifers bear cones and have needle-like leaves. Most conifers are evergreen since they do not lose all their leaves at once. Pines, firs, cedars, and spruces are conifers. Conifers generally provide the most effective buffer in windbreaks.

Guideline #2: Plant Trees to Shade Paved Areas

What you should know – Trees shading concrete or asphalt driveways and parking lots will greatly decrease surface heat. In the summer, a city area with trees shading paved areas can be 12 degrees cooler than one without trees.



What you can do – Plant broadleaf trees near, but not right against, sidewalks and driveways. Create areas in large parking lots or along city streets where trees can be planted for shade. Plant rooftop gardens.

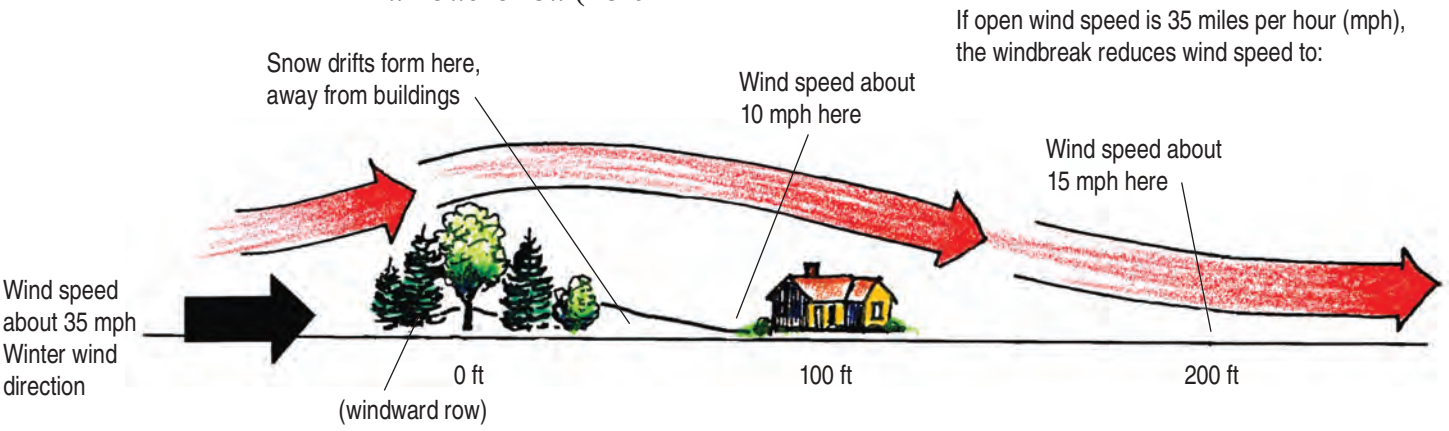
Guideline #3: Plant Trees to Break the Wind and Reduce Blowing Snow and Dust

What you should know - Windbreaks are rows of trees used to reduce the force and direction of the wind. Planting a windbreak around a home or housing development can provide an energy savings of up to 30 percent and reduce blowing snow, noise, and dust.

Windbreaks should be planted in an L-shape (right angle) toward the common wind direction. For best protection, windbreaks may be planted on more than one side of the property. Effectiveness of the windbreak also depends on the density (thickness) of the windbreak and its height. Three or more rows of trees in staggered formation provide the best wind protection. Conifers generally form the best windbreaks but some windbreaks include a few broadleaf trees as well. Windbreaks are effective for a distance of up to 8 to 10 times the height of the mature fully grown trees.

A well-placed windbreak can protect several homes or an entire development from chilling winter winds and drifting snow.

What you can do – Plant conifers several rows deep in a continuous line facing **prevailing winds**. Since snow and stale air can collect in the area directly behind a windbreak, buildings to be protected should be located no closer than 100 feet from the **windward row** (front row facing the wind). The area to be protected should be within a downwind distance of 2 to 5 times the expected height of the tallest windbreak row. (For planning purposes, 20 feet is often used as the height of the tallest trees.)



DIRECTIONS- Imagine you are a city planner or landscaper. Using the "*Tree Planting for Energy Conservation Guidelines*" in this handout, design a new, energy saving neighborhood development plan. Draw in homes and a school. Indicate north, east, south, and west on your plan. Remember to think about what sides of the homes to plant trees on for the best energy savings. Consider carefully where to plant deciduous, broadleaf trees and where to plant conifers. In your plan, draw in the best kind of trees to shade each home, to shade streets and driveways, and to serve as a neighborhood windbreak. Then describe why you planted trees where you did to be energy wise.