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Energy Sense: Home Cooling

Cooperative Extension South Dakota State University

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Website: extension.sdstate.edu

Phone: 605-688-4792

Email: sdsu.extension@sdstate.edu

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ENERGY SENSE:

home cooling



Cooperative Extension Service
South Dakota State University
U.S. Department of Agriculture

home cooling

Several of the energy conservation measures taken to prevent heat loss from a home in winter serve equally well to keep it cool in summer. Insulation and landscaping help retain heat in a home during the winter. In summer, they work in reverse: they limit heating caused by the sun. Attic louvers vent excess moisture in winter; in summer they expel excess heat.

Daytime Cooling

With a few simple adjustments, you can ward off a sizable amount of summer heat. Keep windows and doors closed during the hottest hours of the day, and draw draperies and/or blinds on sunny windows. Awnings or bamboo shades will help protect southern exposures from the sun.

If possible, cook and run heat-generating appliances—washer, dryer, and dishwasher—

during early morning or late evening hours. Electric lights also generate heat; use them sparingly on hot days. The moisture generated in the kitchen, laundry, and bathroom(s) tends to increase humidity in other areas of the home. Use exhaust fans as needed, and keep doors closed in heat-generating rooms when equipment is in use.

Nighttime Cooling

During cooler evening hours, open windows, top and bottom, to vent built-up heat from your home. Open pairs of windows, opposite one another, for cross ventilation. If your attic is ventilated, open the door. Cool air will enter your home through open windows on the lower floor(s); hot air will rise and pass out through the attic.

Fans

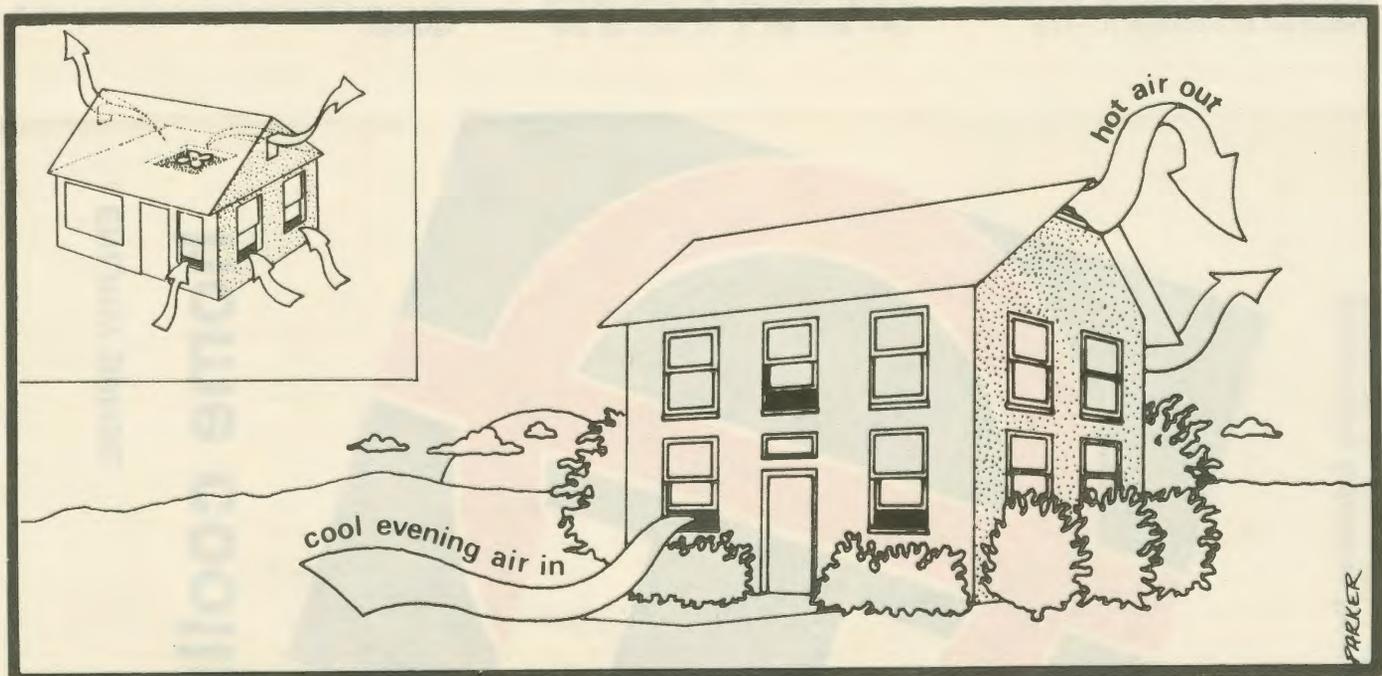
Fans may be necessary to vent built-up heat when little air is moving outside and when the inside temperature of a home is

greater than the outside. The movement of air increases moisture evaporation which, in turn, cools the air. Window fans ventilate more efficiently than portable or rollabout fans; attic fans ventilate best of all.

The capacity of a fan is determined by its "CFM" rating, the cubic feet of air moved per minute. To determine the CFM rating you need for an attic fan, multiply in feet the length of your home times the width times the height (from ground level to just below the attic) and divide the figure by 10. A fan with a CFM rating close to your calculated figure will provide adequate ventilation for your home.

Don't run an attic fan around the clock; that wastes energy. Instead, control use by means of a manual switch and/or timer connected to the fan.

Attic fans use much less energy than air conditioners.



Air Conditioners

Before you buy an air conditioner, try cooling your home with the measures outlined in the preceding sections. In many cases you will find they are sufficient to maintain summer comfort. But if you live in a home or area where intense summer heat and humidity are common or if allergies create health problems, an air conditioner may be your only means of relief.

Air-conditioning units—space or central—are energy gluttons; therefore, to save energy and dollars, correct size, efficient operation, and prudent use are essential.

Select an air conditioner according to the size of the area you want to cool. An oversized unit goes on and off frequently. It lowers the temperature quickly, but does not remove humidity. An undersized unit runs constantly but does not do the job you want it to. Both consume needless amounts of energy. An air-conditioning specialist can best advise you on size requirements of air conditioning units.

An air conditioner's Energy Efficiency Ratio (EER) indicates a unit's cooling capacity divided by the number of watts required to operate it. The

higher the EER, the less the unit costs to run. A cooling unit with a high EER is usually heavier, more durable, and, probably, more expensive than models with lower EERs. But an air conditioner with an EER of 10 will do the same amount of cooling on half the electricity of a comparable unit with an EER of 5. Typical EERs range from 4 to 12 and are labeled on units. For efficient use of energy, buy the highest EER-rated model available of the size required to cool your room or home.

A thermostat setting of 78°F or above is recommended for air-conditioned homes. If your window unit does not indicate degrees of coolness, check the temperature with an indoor thermometer. If the thermometer reading is not 78°F or above, adjust the unit's temperature control.

Close all windows, doors (including closets), and unused rooms when an air conditioner is running. Caulking, weather stripping, and adequate insulation all contribute to the efficient operation of a cooling unit.

Turn off an air conditioner when no one is going to be at home. Connect a timer to the unit and set it to turn on the

equipment a half hour before you arrive home. Draw draperies and shades when operating an air conditioner, but don't block the unit with furniture or draperies.

That portion of an air conditioner extending or sited outdoors, the condenser, should be protected from direct sunlight; siting on the north side of the home is usually best. Also, cut back vines and shrubs from the condenser and keep it free of leaves, grass clippings, and debris.

Check an air conditioner's filter monthly: wash or replace as needed. Check the fan belt for tension and wear; replace as needed. Follow the manufacturer's instructions for other maintenance requirements and have the unit serviced at least every other year by an air-conditioning specialist.

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