

HOME ENERGY GUIDE

REDUCING HEAT IN YOUR HOME

Keeping our homes comfortable in the summer months is nearly as important as in the winter. Although Minnesota historically averages about 12 days a year of 90-degree or warmer weather, there have been increasing numbers of hot days and a significant number of days with high heat index numbers. As these extreme weather events continue, the health and safety issues for the elderly, the very young, and ill people make home cooling more important—and an increasing part of home energy costs.

There are several things you can do to reduce the amount of heat that enters your home, to reduce the amount of heat you generate inside your home, and to expel the heat that is inside.

Solar heat gain

Although gaining heat from the sun is welcome in the winter, the summer sun adds a significant amount of solar heat gain, because the sun is higher in the sky and there are more daylight hours. There are several things that can be done to minimize the summer sun's heating effects on your house:

- **Window awnings.** Made of rigid aluminum or flexible materials such as canvas, window awnings over the south-facing windows can reduce the amount of heat that is transmitted through the glass. East- and west-facing windows can also benefit. The connection between the house and awning must not allow water to pool or leak into the siding or window unit.
- **Sunscreen.** Sometimes made of louvered wood slats or panels, sunscreens can be mounted over a window (similar to an awning) or placed over windows (such as shutters).
- **Trees.** Properly placed trees can provide cooling shade for both the yard and house, but it can take many years to realize the full

benefits. Plant deciduous trees on the west side, at least 20 feet from the house to avoid future foundation or limb issues.

- **Wide overhangs.** When building a new home, addition, or a major remodeling that includes roof design, consider adding wide overhangs on the south side to shield the house and windows from the high, hot summer sun. The proper amount of overhang will allow for winter sun to enter and provide solar gain in the cold months.

Keeping the heat out

The same strategies that keep our homes warm in the winter work to keep heat out in the summer:

- **Insulation.** Adequate insulation in the attic and walls greatly reduces the flow of heat into your home in the summer.
- **Air-sealing.** Whether your home has gaps around vents in the attic or poor weather-stripping of doors and windows, reducing

(over)



Reducing solar heat

Awnings, sunscreens, and trees can reduce solar heat gain in the summer.

the flow of air into your house will also reduce the heat transfer.

- **Close windows and doors.** Whenever it is warmer outside than inside, close all windows and doors and latch them tightly to reduce heat gain.

Reduce indoor heat

Many of our daily activities produce heat or moisture inside our homes. A few changes can reduce the temperature and humidity levels, adding to comfort and saving on air conditioning:

- **Reschedule.** Plan to use appliances such as ovens, clothes dryers, and dishwashers in the evening, when it is cooler. These devices can give off a lot of heat into the house when they operate, adding to the cooling load and potentially decreasing comfort.
- **Turn it off.** Make sure that any unneeded devices or lighting (especially incandescent!) are turned off or unplugged. Computers, TVs,

gaming devices—anything that uses electricity—adds heat to your home.

- **Properly ventilate.** When cooking or bathing, use exhaust fans to quickly remove heat and moisture.
- **Let in cooler air.** During the cool evenings, a window open on a lower level will draw cool air in; an open window higher will allow heated air to escape.

– This practice should only be followed if you are *not* using air conditioning systems. Studies have shown that it actually uses less energy to set the thermostat to a certain temperature and keep the air conditioning system on rather than shutting it off and opening windows. This is due to the dehumidification that an air conditioning system provides.

Radiant barriers

Do they reduce your energy bills or just reduce your wallet?

Radiant barriers consist of a reflective film, usually aluminum, laid over the top of attic insulation or stapled to the underside of roof rafters in existing homes. They are sold as an energy-saving product, with claims of significant reductions in both heating and cooling costs. However, their potential benefit is primarily in reducing air conditioning loads in warm or hot climates and in buildings with little or no insulation.

Radiant barriers make no sense in Minnesota, as it is not considered to be a hot climate state. In fact, the potential savings on air conditioning in a typical Minnesota home would provide a payback of nearly 100 years!

It is far more effective (and usually cheaper!) to install adequate insulation along with proper air-sealing.

