Ventilation Systems

Ventilation is the least expensive and most energy-efficient way to cool buildings. Ventilation works best when combined with methods to avoid heat buildup in your home. In some cases, natural ventilation will suffice for cooling, although it usually needs to be supplemented with spot ventilation, ceiling fans and window fans. For large homes, homeowners might want to investigate whole house fans.

Ventilation is ineffective in hot, humid climates where temperature swings between day and night are small. In these climates, attic ventilation can help to reduce your use of air conditioning. Ventilating your attic greatly reduces the amount of accumulated heat, which eventually works its way into the main part of your house. Ventilated attics are about 30°F (16°C) cooler than unventilated attics. Properly sized and placed louvers and roof vents help prevent moisture buildup and overheating in your attic.

Principles of Heating and Cooling

Understanding the roles of conduction, convection, radiation, and perspiration.

Avoiding Heat Buildup

Keeping the outside heat outside, avoiding heat-generating activities, and using spot ventilation can help keep your home cool during hot days.

Natural Ventilation

In some parts of the United States, natural convection and cool breezes are sufficient to keep homes cool.

Ceiling Fans and Other Circulating Fans

Fans that circulate air within your home can improve your comfort level.

Window Fans

Window fans use relatively little electricity and provide sufficient cooling for homes in many parts of the country.

Whole House Fans

For larger homes, a whole house fan provides excellent ventilation to achieve lower indoor temperatures. For homes with ducts, an alternative approach uses those ducts to supply ventilation air throughout the home.