

Four Smart Steps to a Cool Home

If your home feels like a toaster on hot summer days, follow these four steps to achieve cool comfort

1. Insulation & air sealing
2. Ventilation fans
3. Energy efficient lighting
4. Cooling system upgrade

Cash rebates are offered for these measures by Garfield Clean Energy and your electric utility.

Step 1: Insulation and air sealing

We usually think of insulation to help conserve heat in the winter, but insulation combined with air sealing will also keep your home much more cool in the summer.

Air sealing will stop the direct-air leaks into your home. Air-sealing with caulk and spray foam will seal up the cracks in your home, while weatherstripping will make windows and doors close tightly. Air sealing will also improve your home's durability, and create a healthier indoor environment.

Insulation applied in the attic, walls and along basement or crawl space walls reduces the flow of heat through your home's exterior. In winter, insulation keeps the heat inside. In summer, insulation keeps the heat outside and protects your cool indoor air.

Together, air sealing and insulation provide the most cost-effective first step for making your home stay cool. You will enjoy the benefits of better insulation year-round.

Air sealing can be a do-it-yourself project, or you can hire an insulation contractor to seal up the cracks prior to adding insulation. Insulation contractors use special tools to detect all the spots where summer heat is pushing into your home.

More info on making your home comfortable and energy efficient year-round at www.GarfieldCleanEnergy.org
FREE energy coaching: call (970) 704-9200



Step 2: Ventilation fans

Electric fans were invented in the 1880s. More than a century later, they remain an affordable and energy efficient way to move air inside your home and bring in cool outside air. Today's fan technology can cool your home while adding just pennies per day to your electric bill.

Ceiling fans and oscillating tabletop fans move air within a room, creating a wind chill effect that makes people and pets feel more comfortable. Fans work because moving air feels cooler, but they do not reduce indoor temps. (There is no use in running a fan in a room that's not occupied.)

Whole house fans pull cool evening and nighttime air in through open windows and exhaust the day's hot, stuffy air out through vents in the attic and roof. In much of western Colorado, where nighttime temps fall below 70 degrees, a whole house fan operating in a well-insulated home can meet cooling needs even on the hottest days.

A manual or automated switch turns the fan on after the outdoor temperature drops below the indoor temperature. The fan runs until the house is cooled down. The cooler air will also cool the walls, floors and furniture to help your house stay comfortable the next day.

Whole house fans are installed in the attic, and draw air upward through louvers mounted in the ceiling. Installing a whole house fan is tricky and should be done by an experienced professional. These large fans require dedicated circuit wiring, and your house may also need additional attic vents.



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Step 3: Energy efficient lighting

You know from experience that incandescent light bulbs get hot, and they keep radiating heat while they are on. Incandescent bulbs release 90 percent of their energy as heat. In the summer, the heat from these bulbs adds to the heat in your home.

LED bulbs and compact fluorescent bulbs generate a fraction of the heat, and use about one-quarter of the energy compared to incandescents. (They also last far longer and cost far less to operate.)

Check all the lamps and fixtures in your home and swap out heat-producing incandescents for cool, energy-saving LED or compact fluorescent light bulbs. These bulbs can be on for hours and they will never get hot to the touch.

Step 4: Cooling system upgrade

If you have followed Steps 1, 2 and 3 and your home is still uncomfortably hot, then it's time to look for an energy efficient cooling system. Models on the market today are much more efficient even than those sold 10 years ago, delivering a lot more cooling for fewer dollars.

Evaporative cooling is the most affordable and energy efficient option. These systems use the cooling power of water evaporation to drop the temperature of air by 15 to 40 degrees. Evaporative cooling is very effective in Colorado's dry climate.

Evaporative coolers use less than one-third the energy of air conditioners, and cost about half as much to install. These systems use no refrigerants that can harm Earth's ozone layer, and they operate more quietly than air conditioners.

Unlike central air conditioning systems that recirculate the same air, evaporative coolers bring a steady stream of fresh air into the house. Filters remove most of the dust from incoming air, a key factor for those with allergies.

Evaporative coolers can be mounted on the roof, but many experts prefer ground-mounted units, which are easier to reach for monthly maintenance. They can deliver cooled air directly into a central living area, or can be connected to the ductwork in larger homes. Small coolers can also be installed in a window to cool a single room by 5 to 15 degrees.

Coolers should have two speeds, along with a vent-only option that can be used like a whole house fan. They'll require maintenance about once a month.



Photo by Cyrus McCrimmon, The Denver Post
Tim Steele, left, and Bowen Christensen with The Cooler Company Heating & Air install an evaporative cooler on the roof of a home in Wheat Ridge.

Air conditioning is the highest-cost way to cool your home, for installation and operation. In some homes, it's still necessary, so an upgrade to a high-efficiency model will reduce energy costs and increase home comfort. Even if your air conditioner is only 10 years old, you may save 20 to 40 percent on cooling energy costs by replacing it with a newer, more efficient model.

Air conditioning units come in three varieties. Central air conditioning uses the ductwork inside the house to deliver cool air from a compressor unit located outdoors.

Ductless mini-split units use an outside compressor that feeds cool air to one or more indoor air handling units. Each unit is thermostat-controlled for maximum flexibility in cooling needs. Mini-splits can be operated very efficiently, but cost about 30% more to install.

Room or window air conditioners cool single rooms. They're less expensive to operate than central air and are the least expensive type of air conditioning to install. Look for units with an energy efficiency rating (EER) of 10 or higher.

When buying an air conditioner, look for a high efficiency model. Central air conditioners are rated by seasonal energy efficiency ratio (SEER). Many older systems have SEER ratings of 6 or less. The minimum SEER allowed today is 13. The higher the SEER rating, the lower your energy costs will be in the coming years.



Look for the ENERGY STAR® label for central air conditioners with SEER ratings of 13 or greater, and buy equipment with the highest SEER ratings for the most savings.

Sources: U.S. EPA's ENERGY STAR and ENERGY.GOV