



KEEPING COOL:
5 Guidelines for
Getting the *Right* Central
Air System for *Your* Home



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1. OUT WITH THE BAD AIR: A Truly Effective Central Air System Begins with the *Removal* of Heat and Humidity from Your Home.

There are two approaches to cooling your home: the more typical way, and the Heritage way.

The more typical approach is one that tries to “push: or “force” cool air into a house that is already full of hot, humid air. This requires equipment with more power, and it’s not very efficient. It’s also not very effective.

Have you ever been in a restaurant or home with central air that either felt cold and damp, or felt stuffy and sticky—despite the fact that the thermostat was set at a comfortable 72 degrees? Those are both the kind of problems you get when you “force” cool air into a room that already has high heat humidity.

At Heritage, we take a different approach: We know that truly efficient and effective air conditioning is *not about forcing cool air into your home, it’s first about removing heat and humidity from your home.* Once the excess heat and humidity is out of your home, then your system will be able to cool your home more efficiently, and more comfortably.

How do we design such a system? We start by carefully measuring how much heat and humidity is getting into your home—through windows, doors, walls, ceilings, air leaks, heat from appliances and people, etc.. We also analyze how air flows through your home. Then, we’ll design a system that pulls heat and humidity out of your home and replaces it with cool, comfortable air.

Any professional you consider for installing your central air system should make these calculations for each room. This is absolutely essential if you want to take advantage of our second guideline—getting air flow to work for you.



2. WHEN GOING IN CIRCLES IS GOOD: Making Sure You Have Good Air Circulation Throughout the Home.

If a system lacks EVEN air circulation between rooms and floors of the home, the result will be *inconsistent* temperature and humidity control, leaving you often uncomfortable—too warm or too cool.

The key to consistent comfort is consistent air circulation. Think of each room in your home as a section of a wheel. When you don't get good circulation in one room, it's like having a flat spot on a wheel; the wheel is not going to roll smoothly. With central air conditioning, one room with bad circulation can keep air from circulating smoothly through your whole house.

This is so important. Experts say that improper air flow can actually reduce the efficiency of your air conditioning equipment *by as much as 60%*! They also say that improper air flow is a common cause of many *breakdowns* in air conditioning systems. When air is not flowing smoothly, this puts extra pressure on the equipment to force cool air into the home.

So how do you get proper air circulation throughout your home? As we said above, it starts with a system that is designed to draw the right amount of heat and humidity out of each room as the cool air comes in.

And this is not just about having the right air conditioning equipment. It's more about having the right size and location of the *ducts* that circulate the air through your home. Good *ductwork design* is key to good air circulation and consistent comfort.

You should ask any professional you are considering for central air installation to submit a copy of the ductwork design with their quote and go over it with you. With a little explanation, you'll be able to understand the design, and this will help assure you that you'll be getting the proper air circulation. Without a good ductwork design, you're at risk of being disappointed with the way your new system performs.

At Heritage, our technicians are always happy to go over the ductwork design with you, and explain how it will deliver the right air circulation and consistent, cool, comfort throughout your home, even on the hottest days.

3. CONSERVING ENERGY: Making Sure You Get an Air Conditioning System That is Very Energy Efficient.

Central air conditioners are rated according to their Seasonal Energy Efficiency Ratio (SEER). The higher the SEER rating, the more efficient the air conditioner. Many older central air conditioners achieve SEER ratings of only 6 or 7 while new equipment is required by the government to have a SEER rating of at least 13!

And the government keeps raising the SEER requirement because of the increasing



demands on our power grids—demands that have led to some of the widescale blackouts we’ve seen in recent years.

Since energy costs are going up all the time, it just makes good sense to consider purchasing the most efficient system you can afford. The American Council for an Energy-efficient Economy recommends getting a system with a SEER rating of at least 14.5.

However, it’s important to keep in mind that the actual efficiency of your air conditioning system will be very much affected by the conditions under which your system is running.

It’s like driving a car. Your car might be rated at 30 miles per gallon. But if the car is loaded with people and you’re driving up and down hills, or in stop and go traffic, or at high speeds—you’re probably not going to get 30 miles per gallon.

Likewise, if your air conditioning system is burdened by a poor air flow system, or if it is *not* designed to remove heat and humidity from the home, these factors will actually *lower* your SEER rating. In other words, *even if you have equipment with a SEER rating of 13, poor air flow could reduce the effective SEER value of your system to 6 or 7!*

That’s why the design and installation of the entire system is so important.

By purchasing equipment with a high SEER rating, and by getting the right design and installation, you’ll be saving the most money every year on energy costs, you’ll be keeping your home more comfortable, and you’ll be protecting the environment as well.

4. THE GOLDILOCKS FORMULA: Getting a System That is Not “Too Big” or “Too Small,” but is “Just Right” For Your Home.

Two of the most common mistakes people make when purchasing central air conditioning are (1) Getting a system that is too large for the size and style of house, or (2) Getting a system that is too small.

This happens when contractors recommend an oversized unit, saying that “bigger is better.” It isn’t—it’s just more expensive. Or it happens when contractors try to sell you a smaller unit so that they can underbid other contractors and make sure they get the job.

Consider some of the problems you can get into from overbuying or underbuying.

An oversized central AC system will turn on and off too frequently, which will wear down your equipment and waste electricity. Plus, the larger system will cost you more upfront!

This frequent cycling on and off will also make your indoor temperatures fluctuate up and down more, resulting in a less comfortable environment. The oversize unit



will lower temperature too quickly and then turn off *before removing the appropriate amount of humidity*. This is another reason why homes with oversize units feel cold and clammy, or chilled; the air is cold and damp.

The EPA (Environmental Protection Agency) estimates that nearly half of all existing air conditioning equipment is over-sized! They estimate that this costs 20% each year in wasted energy!



Likewise, a system that is too small for your home will overwork the air conditioner and it may fail to keep your home adequately cool. Such a unit will lower humidity, but will not lower the temperature enough, so the air will feel dry but warm—and the system will run all the time. *And over-running the equipment will lead to premature breakdowns.*

And even if you get the right size air conditioning equipment, you also have to beware of “buying too small” when it comes to your air duct or airflow system. *The National Comfort Institute states, “It’s not unusual to see return air systems undersized by 30-50%. In fact, equipment problems including compressor burnout, frozen indoor air conditioning coils...are often a result of improperly placed and installed air distribution systems.”*

A good way for you to be sure the equipment you’re buying is not over-sized or under-sized is to find out if the contractor you’re working with did a formal “load” calculation (which we always do at Heritage). Ask for a copy of the calculation to be submitted with the proposal. This will at least assure you that the contractor takes capacity design seriously, that he’s not just “winging it.”

Bottom line: there is an air conditioning system that is “just right” for your size and style of home, and at Heritage we’ll make sure you get it.

5. THE HOMEWORK FACTOR: Working With a Professional Who Will Study and Evaluate Your Home Before Designing Your System.

The EPA states that you should “only hire a contractor who asks questions, measures windows, doors, floors, ceilings, checks insulation, calculates a cooling load, and fixes system problems that may compromise comfort and cost you money.”

At Heritage, for example, we never recommend a central AC system without first doing a complete analysis of your home and checking a list of factors that include:

- The size and style of your house and how many windows it has
- How well insulated or airtight it is
- How much solar energy comes in through the windows
- How much shade is on your home’s windows, walls, and roof
- How much heat the lights and appliances give off
- Your typical thermostat settings
- The number of occupants in the home
- How much air leaks into your home from the outside

We take all of these factors into account by doing a computer load calculation, as



mentioned earlier. We measure all rooms, check insulation, check windows and doors, and input all data into special industry software to calculate cooling load.

Then we also ask you a lot of questions, such as:

- Do you have moisture problems?
- Do you have hot or cold rooms?
- Are you about to make any changes to your home?
- How have your energy bills been running (a contractor should ask to review past bills).

All of this information helps us determine how much cool air the system must generate on the hottest days in order to keep you comfortable.

At Heritage, we make sure that all the components of your new system are matched, tuned and designed to work together. We will customize and tweak the setup and operation of your new equipment so that it operates at peak performance and efficiency within the unique conditions of your home.

To request a Free, No-obligation Home Comfort Survey, just call Heritage: 1-800-977-4737.