



Whole-House Fans For Cooling

People I talk to sometimes confuse the function (or the name) of the whole house fan with a ceiling fan or an attic fan but, since I covered both ceiling and attic fans in past articles, that won't happen with my loyal readers, will it?

While I'm on the subject of loyal readers, thank you for the kind words you've offered me in emails, phone calls and around town. In addition to speaking to groups of any size or orientation about energy issues for no fee, I write these articles every week and maintain the public service web site www.TheEnergyGuy.com. Because The Union doesn't make the Home Seller Showcase available online, people are always asking me for past articles. To make it easier for you to find them – and save the time it takes me to get them to you - I've posted them all here - <http://www.theenergyguy.com/Articles.html>.

Once an article has been published I'll usually post it to the web site within a week (OK, maybe two - I'm a busy guy!). I also get a lot of phone calls from people at work with general energy questions which, while I wish I had the time to answer, I usually don't. If you have a general energy question please write me an email instead (address below) or – way better yet – ask me the question on the "Sustainable Living Blog" on The Union's web site. That way everyone else reading the blog can benefit from the answer to your question and, hopefully, other people's experiences as well! Just go to www.TheUnion.com and click on "Opinions – Blogs" to get to the blogs page.

Back to the subject of whole house fans; this fan is typically installed in the ceiling of your home when there is an attic above (smaller wall or roof mounted fans are available if you don't have an attic). The idea is this - you open up windows, turn on that giant fan, your curtains go from vertical to horizontal, and the newspaper on the table blows across the room and plasters itself over your face (just kidding). While that could happen – if you had a huge fan and just one window open - that's not the proper way to use one, although it does sound kind of fun, doesn't it.

These fans can save you a lot of cooling energy in summer while also increasing comfort. Similar to the ceiling fans I spoke about last week; if you don't have air conditioning you won't save anything on cooling costs but you will be a lot more comfortable!

The most effective way to use one of these fans is to wait until the outside air temperature is at least one or two degrees cooler than the inside air. First open a window or two in all rooms opposite the doorway or opening to the area with the whole house fan (usually a centrally located hallway). Be sure the doors in between those rooms with open windows and the whole house fan are open too (that little

“undercut” beneath your door isn’t at all big enough for the air to return to your forced air heating system, much less a whole house fan’s air flow, but that’s another subject for another day). When the whole house fan comes on, the cool breeze blowing past you helps evaporate moisture from your skin which, in effect, makes you feel 4 to 5 degrees cooler than you would without the breeze. As the cooler outdoor air flows through your home, out the ceiling and into the attic, it’s taking with it the heat absorbed by all the stuff inside your home.

What’s interesting about air is that it doesn’t really hold any heat to speak of – it would take just a few seconds to cool down the air in your home if it weren’t for all the furnishings, sheetrock, and other materials inside. Unlike the air, they can store a lot of heat which is why it takes so long to cool things down when you ventilate your home. On the flip side – and this is a key to saving big – if you’ve done a super job of cooling down your home’s “innards” at night, the next day it’ll take a lot longer to heat up. Makes sense, right? As a result, to get the most savings from your whole house fan, try to get your home as cool as you can overnight. The cooler the outside temperature gets overnight the less you’ll need to run your fan, and vice-versa. Oh, and if your curtains are standing on end, either your fan is too big; you don’t have enough windows open, or both.

According to PG&E “a whole house fan can use up to 90% less energy than a compressor-based air conditioner” and they’ll give you a \$100 rebate if you install a qualifying product (see www.pge.com for more information). Here’s another trick to help you actually get to that level of savings. Think of it this way – your whole house fan has been working hard all night to scrub all that heat out of the “innards” of your home. If you could reduce some of that heat from getting in the next day, you’ll use less fan energy and your home will stay cooler longer. The three places most of that heat gets in through are your windows (#1), air leaks (#2) and your ceiling (#3); the order might change a little, depending on the home, but this is fairly typical. I’ve dealt with all three of these in past articles – solar screens on windows getting direct sun, seal the leaks in your home (and ducts), and make sure you have R-38 insulation in your attic.

Be sure to pick a quiet fan and one with good dampers to prevent wintertime heat loss. The fan should be located in the center of the home and, if at all possible, away from the bedroom door unless you can sleep OK with a fan running (some people can’t, but the noise can be useful for “whiting out” traffic and other noise). PG&E has an excellent “Technical Sheet” on whole house fans that covers all the issues – sizing, safety, attic ventilation area needed, etc. See their web site - I highly recommend it!

Typically a contractor with a C-20 (HVAC or Heating, Ventilation and Air Conditioning) license is the person to call to get a whole house fan installed. (My company is licensed for general contracting, electrical and plumbing – we wouldn’t install a whole house fan unless we were performing at least two other trades). With this short break between the summer cooling and winter heating season your HVAC contractor might actually have the time to install one for you. While you’re at it, ask them about sealing your ducts and servicing your heating and cooling system. Most people wait until the heating or cooling season hits before contacting their HVAC contractor, only to find they have to wait weeks to get someone out – if they even have time to call you back! So, be proactive and call around for a few bids today!

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