

GREEN TECH THE SERIES COLUMN FOR SEPTEMBER 16, 2015  
HEADLINE: HEAVENLY BREEZES FROM A CEILING FAN

It is no secret that the climate is changing, hence, the need for making our homes more energy efficient. The introduction of air conditioning has almost become a must in today's homes, not unlike in southern climates. With the recent heat wave and the fact that August set a record for temperatures, one would wonder if this kind of weather is here to stay.

While this comfort-added convenience of air conditioning is nice, it comes with a cost and, with the ever increasing price of electricity, a larger and larger cost. With that in mind, it pays one to look at other options.

I have long been aware of the benefits of air movement and ceiling fans are a valuable addition to any home. In fact, they can make a room feel four to five degrees cooler and, in the case of a home with cathedral ceilings, like our church, they can result in a major cost savings on the energy bill.

If you are considering installing ceiling fans in your home, adding one in every room can, based upon at least one study, reduce air conditioning use by up to 40% and make a significant difference in your comfort during the winter, too. The only fans worth buying, however, are ones rated as an Energy Star compliant fan. These fans, on average, move 15% more air than a standard fan. Energy Star specifications for ceiling fans are stringent, which is why so many fans are not rated. To get the Energy Star rating a fan must move a defined air flow, based on the number of watts of power consumed by the motor and controls. A conventional ceiling fan uses about the level of power that a 100 incandescent light bulb uses, while an Energy Star fan will use about half of that. They must have a minimum air flow of 1250 CFM (cubic feet per minute) and a maximum of 5000 CFM. As well, they must come with a 30 year warranty on the fan motor and 2 years on any light kit.

Today's ceiling fans are considerably more efficient than they were even a few years ago. A review of the values of Energy Star fans showed that some operate 24/7 for less than \$20 a year. They

are lighter, certainly more decorative and come with numerous blade sizes. Blade size is very important. An 80 square foot room should have a fan with blades no larger than 36 inches. For a room that's up to 150 sq. ft., a blade length of 36" to 42" is recommended. A larger room should have a minimum of 50-54 inch blades. In very large rooms, over 300 sq. ft., one should be looking at fan blade length of 60 inches.

Where it is located can make or break the benefits of the ceiling fan installation. The blades should be no less than seven feet from the floor and 10-12 inches from the ceiling. Many fan kits are adaptable for a standard eight foot ceiling height. Further, the blades should be no less than 18 inches from any wall. In a long, narrow room it may be necessary to install more than one fan; this also applies for a large great room, especially one with cathedral ceilings, which are popular in modern homes today. Two or more strategically located, properly sized fans are more effective than one with very large blades. Due to the height and open space of the church, I did the air calculations and we purchased fans with a span of 72 (two 36 inch long blades).

There are other less obvious benefits to ceiling fans. Installed over a dining room table or in a kitchen, they can reduce the number of flying insects in the vicinity; the air movement makes flying difficult for them. Ceiling fans can move a substantial amount of air, eliminating the need for floor or desk fans and making the area safer for pets and younger members of the family.

What else do you look for when purchasing a ceiling fan? If the fan you are looking at has wooden blades, make sure they are fully coated to prevent warpage. If you are considering a fan for a bathroom or hot tub room, stick with plastic blades. The pitch of the blades is important, cheaper blades have a minimal pitch, look for a fan with blades that have no less than 11 to 16 degrees of pitch. In an area with high humidity, look for one with a blade pitch of up to 22 degrees.

Once you have installed your fans, and most can be installed where your existing ceiling light is located, there are summer and winter benefits. In the winter, run your fans in a clockwise rotation, opposite that for the summer. The winter setting will push air down

from the ceiling, while in the summer the circulation lowers your skin temperature, making you feel cooler even when the actual temperature is higher.

While looking at fans early in a renovation project may seem premature, in fact the necessary ceiling location and wiring must be installed before the insulation goes in, hence the need to select the fans. We researched a number of makes and given the size of our area, there were not many fans with a 60 inch plus blade span, so we found the choice limiting. That said, we could use more fans, but again the design of the interior had some dictating factors. We selected fans from Fanimation, a reputable manufacturer. Their Keystone 72 model has a 72 inch blade span, a very energy efficient DC motor and six speed controls. On high RPM it moves a staggering 8895 CFM, operating with 14 degree pitch blades. This fan has an annual operating estimate of just \$30 a year. A close second and worthy of a look is the Emerson Midway ECO. This fan has an even more amazing annual energy use of just \$18. Emerson is world renowned for quality ceiling fans. One of the best web sites for reviewing fans is [www.hansenwholesale.com](http://www.hansenwholesale.com). The information and technical advice on there is excellent. The value of ceiling fans is, unfortunately, underrated and proper use can and will reduce your energy cost.

Questions or Comments: Cam Allen L.I.W. NHI ACI LEED Green Assoc  
E-mail: [cam@alltechconsultinggroup.com](mailto:cam@alltechconsultinggroup.com)