

A few of my favorite green and efficient things

Radiant heating, tax credits warm up this holiday season

Christmas season is here, and the recent cold and snowy weather has plunged everyone headlong into the spirit of the season. As I write, it is still early enough in the 12-day countdown that old and familiar carols and songs are not yet numbing our minds.

Although I am not a great "Sound of Music" fan, a tune that often repeats in my brain – and to my wife's delight, as a really off-tune whistle – is the "Sound of Music" classic "Favorite Things." For the rest of this article you can turn the tune on in your brain as I share a half dozen or so of my "Favorite (Green and Efficient New and Existing Residential Building Science Products, Strategies, Programs and) Things!"

Just in case you don't remember how the tune goes...
 "Raindrops on roses and whiskers on kittens
 Bright copper kettles and warm woolen mittens
 Brown paper packages tied up with string..."

Favorite Thing #6 Radiant heating (and cooling)

Cold floors in winter are the enemy of every wife I know (especially mine). We really love our home, but we did not include radiant floor heating when we built 15 years ago. The promise of continuous, efficient warmth emanating from the slab below our feet may be the trip for the trigger that starts our next new-home construction project.

The direct transfer of thermal energy into our living spaces is one of the most effective and efficient home-heating designs to date. Up-front installation costs are usually the prohibitive factor on projects where this type of system is being considered. But, as is with most efficiency upgrades, it's "pay me now or pay me even more later."

The heat source for these systems can be a simple gas or electric water heater, a high-efficiency boiler, an all-electric heat pump, a geothermal well (great if you have geothermal activity under your home) or – best of all – a solar water heating system (free heat, baby).

Radiant cooling also is gaining in popularity and works great in tightly constructed, well-insulated homes. Cooled liquid is circulated through the slab or within walls just as with the heating system. The liquid can be cooled by several means including a high-efficiency evaporative cooler/chiller, a refrigerated compressor and coil unit or even a hybrid of these two. Combining radiant heating and cooling systems in a home eliminates the need for ductwork and air-handling fans. Two of the biggest energy users in the home are no longer needed, and no holes are cut into the ceiling and insulation for duct penetrations.

Favorite Thing #5 Passive solar design

Even with the advent of thermally resistant and low-emissivity dual-paned glass, most of the cooling equipment capacity installed in new and existing homes is needed only to mitigate the effect of poorly placed windows and glazing in doors. Heat that never enters a home in the summer does not have to be removed by expensive equipment and electricity.

Of course we don't want to live without the benefits

of day-lighting and outdoor views, but we should plan to use good passive solar design when orienting our homes.

In the winter, the best place to spend the morning is in front of a south-facing window (where Flip the Dog is now). The low angle of the winter sun penetrates into the home if allowed and gently warms away the chill of the night. Providing for good passive solar design during the construction planning process will greatly reduce the size and cost of HVAC equipment needed, lower monthly utility costs of a home and improve your summer and winter comfort.

Are you still humming?

"... Cream colored ponies and crisp apple strudels
 Doorbells and sleigh bells and schnitzel with noodles
 Wild geese that fly with moon on their wings..."

Favorite Thing #4 Induction cook tops

What is cooler and more fun than being able to cook on a surface that hardly gets warm? Sure, the energy cost to prepare meals is not one of the biggest in the home, but come on – you can boil water in 10 seconds!

Favorite Thing #3 Energy-efficient and green-building tax credits

As a small business owner, I love anything that can reduce my required payments to Uncle Sam or Uncle Bill. Fortunately, we currently have tax credits available that do both.

Building and/or purchasing a Build Green New Mexico or LEED-certified home in New Mexico earns state tax credits ranging from \$5 to \$9 per heated square foot. The same projects will earn \$2,000 in Federal IRS tax credits to the builder of the home – savings that can be passed on to the homeowner.

Homes certified under these programs are designed to save energy and conserve resources at construction and every month you live in the home. Costs of required efficient and green-program upgrades are typically recouped during the first five to 15 years of ownership



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through reduced utility payments. The tax credits allow purchasers of these program homes to enjoy the full economic benefit of green and efficient home ownership at the time of purchase.

Favorite Thing #2 Home Energy Rating

Since I am a certified Home Energy Rater and own a Home Energy Rating business, Favorite Thing No. 2 is probably a given. A Home Energy Rating Score (HERS) provides an assessment of the relative efficiency of a home based on utility usage and energy costs.

A typical, all-electric home built to IECC code in 2004 has a 100 HERS rating. A home that requires no outside energy or utilities and/or produces its own required energy through an equivalent renewable source has a HERS score of zero. This is considered a "Net Zero" home.

A HERS rating on a home can be used in the home-selection process just as a miles per gallon rating is used when buying a new vehicle.

Home Energy Ratings are a great tool for maximizing home efficiency and minimizing construction and equipment costs when planning a new home or if you are planning upgrades on the house you now own.

Favorite Thing #1 Spending time with family and friends in Las Cruces for the holidays!

Keep your own sappy holiday song handy this season and have a great Christmas and a super 2010!

"... Girls in white dresses with blue satin sashes
 Snowflakes that stay on my nose and eyelashes
 Silver white winters that melt into springs...
 These are a few of my favorite things!"

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