

Nichols Hills

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News

Cool, Cool Summer

POINTING TOWARD LIFE
Courage Award Gala

CREATIVITY WORLD FORUM
Global Ideas in the Heartland

TRIPLY TERRIFIC Wine, Women and Shoes



FALLING FROM THE SKY

By Mary Ellen Ternes



ERICK GFELLER

Opportunity... masked as destruction. The recent hail storm both alarmed and amazed us. My dog Mack and I were about to head out for a jog when we saw the wind pick up, followed by sideways, spitting rain, and then the sky came crashing down in the form of baseball-sized hailstones. When it finally stopped, we headed out cautiously, jogging through the mist rising from the hail that blanketed everything in sight.

The destruction was, and is, remarkable. Insurance adjustors and catastrophe response contractors with decades in the business have said they've never seen anything like the damage we sustained on May 16. Most of us have since moved into repair mode, and this presents us with an opportunity to adopt a fix that could reduce our future energy bills. Replacement options include reflective roof shingles, radiant barriers, solar panels and solar water heaters, maybe with a mind toward considering possible future geothermal installation. If you haven't had one yet, perhaps it's time for an energy audit that can help identify your best strategy.

I'm very interested in ways to keep my house cool without running my air conditioner so much. Apart from normal insulation, caulking and sealing, I've been checking out other ideas using the Department of Energy and the Environmental Protection Agency's energy efficiency and Energy Star residential web pages for home improvement. Our homes absorb a lot of heat from the sun shining on the roof, which are typically covered with roofing shingles that are made with asphalt, or tar, which is used as a binder because it's great for keeping out water. But black tarry asphalt also absorbs a lot of heat from the sun.

In replacing our hail-shredded roofing shingles, we can offset a lot of that heat gain by choosing reflective roofing products that can lower roof surface temperature and reduce the load on our air conditioning systems. The available products range widely, from asphaltic shingles that look like normal shingles but use reflective granules, to tiles painted with reflective pigments, to shiny white roofs (probably not the best for my neighborhood). My research continues on roofing choices, but I'm leaning toward reflective shingles that look a lot like the ones I had before, but reflect more sunlight.

Another way to reflect the sun's energy from the roof is to install a "radiant barrier" – essentially a highly reflective material (usually aluminum) placed in the attic, either on the floor or stapled under the eaves. A way to understand the benefit of radiant

barriers is to remember that energy is transferred in three basic ways: conduction, convection and radiation. Conduction transfers energy through contact; convection transfers energy through mixing; and radiation transfers energy through, well, radiation. The warmth on your face from the sun is radiant energy. Radiant barriers are just that, barriers reflecting transmission of radiant energy. Think of a radiant barrier as a shiny thermal “emergency blanket” or “space blanket” for your house. I’m still researching the overall benefits of radiant barriers once installed and their performance over time, but so far, I’m persuaded that it will help cool my attic, even in addition to reflective roofing shingles. According to the DOE, the cost of installing a radiant barrier varies widely, so you need to get competitive estimates if you decide to go this route. You’ll probably also need to study installation methods and make a decision about how you’d want it installed, i.e., either stapled under the attic or placed on your attic floor. If you put it on your attic floor and it gets dusty, it won’t work as well.

I’m also considering a solar water heater. Solar water heaters are basically made of a long glass tube full of water that sits on your roof, letting the water get hot. It’s not new technology, and Oklahoma is a great place to use the sun’s heat for this purpose, as long as the next hail storm won’t shatter it. I’m still researching this option (and hail ratings), but so far, the plumbing looks like it will work out.

When you’ve done your research and decided what might work for you, check out the tax benefits. There is a 30 percent tax credit up to \$1,500, available until December 31, 2010, for qualifying energy efficiency home improvements on your existing home that is your principal residence. In addition, there is a tax credit for renewable energy up to 30 percent of cost, available through 2016. Websites walk you through the IRS forms and help you figure out which choices are clearly covered in the tax incentives. It’s not clear whether radiant barriers qualify for the tax credit, but I’m not sure that will make a difference to me.

My next step is geothermal, and in a few years, I’ll be adding solar power panels. ■

Mary Ellen Ternes, Esq. is a former chemical engineer from both the EPA and industry. She is currently a shareholder with McAfee & Taft and co-chair with Richard A. Riggs, Esq. of its Renewable and Sustainable Energy Group, and is serving a three-year term as City of Nichols Hills Environment, Health and Sustainability Commissioner.

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A review of the Residential Energy Efficiency Tax Credits: www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US43F&re=1&ee=1

Residential Renewable Energy Tax Credits: www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US37F&re=1&ee=1

See also www.energystar.gov/index.cfm?c=tax_credits.tx_index and www1.eere.energy.gov/buildings/tax_residential.html.

Check out radiant barriers at www.ornl.gov/sci/roofs+walls/radiant/rb_01.html. (Note: radiant barriers may not qualify for energy efficiency tax credits.)

If it isn’t overwhelmed with requests, this site helps you calculate energy savings from your roofing alternatives: www.roofcalc.com.

For other general practical tips on making your home more energy efficient: www.energystar.gov/index.cfm?c=home_improvement.hm_improvement_index

