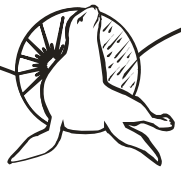

Does Your White Roof Have A Green Glow?

By: Howard Dratch
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This green idea has been headlined a few times recently. The articles have declared that painting roofs white would save more than the equivalent space put into expensive solar panels. It is a good idea for a green and energy-efficient world – at least in the hotter and sunnier climates. In the US the demographics have changed, slipped toward the Sun Belt which makes the idea far more appropriate than it would have been before the Rust Belt rusted.

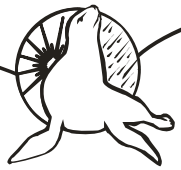
It is not such a radical idea – the painting of roofs white and reflective rather than the usual New England-like fake-slate or tar-black. The difference now is that photo-voltaic panels and hoped-for solar technologies are becoming available and therefore tempting as an active, visible, high-tech solution to a world crisis. Green is now the color of goodness and virtue; businesses and institutions are itching as if they had poison ivy to climb up the green stalks toward global responsibility.

One such report in Business Week sagely noted that the 21st century world is often dominated by the notions that “complex problems require complex solutions.” But they point out that the environmentally correct solution is probably that white paint is often cheaper and better than the expensive and glittering solution. K.I.S.S. -- Keep It Simple Stupid – is the hard lesson of a high tech world. An iPhone might be, should be, probably will be fun, useful and the summit of cool. But when its battery is down and the power is out after the storm to recharge it; that $10 analog phone will come out of the closet because it is simple enough to work.

General Roof Management's web site touts its “Cool Roofs” program for an example. It is being written into code requirements in California -- a place where “green” is a charged word-- Georgia and Chicago. Their Cool Roofs are white or light-colored roof surfaces which, they write, have surface temperatures 30-90 degrees (F) cooler than more conventional roofing. This lowers the costs of cooling the building by 20-50%.

Plant Services.com writes that a typical flat, tar-black roof can get to 170 F in summer. Further they point out that these hot roofs contribute to the “heat island effect” which is said to be connected to increased carbon dioxide levels in urban areas. The heat build-up also requires extra fossil-fuel use to generate power for the additional cooling loads.

The relative reflectivity of the Earth itself is of interest in the nature of cooling. A black earth somehow denuded of clouds, ice caps, glaciers, deserts would be a hot place indeed. The Business Week article compared a dark Earth to a black leather car interior on a hot day and the Earth with those light-colored features as a car with a beige leather



interior. In the jargon of planetary scientists the “albedo” of the planet – its relative level of reflectivity – is 30%.

The new element affecting the albedo of Terra is the presence of greenhouse gases in the atmosphere which contain additional heat. The sun gives Earth 1350 constant watts of energy, of illumination. Some is absorbed, some reflected by the light-colored features. In the modern, industrial world an additional 2 watts per square meter is retained over the retained levels in the world before it became industrialized.

The new generation of solar, energy-producing panels are not reflective. They are black and designed to collect and use those watts of illumination beamed down to us. The panels receive an average of 300 watts per day in a square meter panel. Most of that is still lost due to inefficiency but the 20% that is utilized is enough to offset the 2% loss to greenhouse gases.

Therein lies the hot rub. The meter (3.1 foot) square photo-voltaic panel costs about $1000. That thousand bucks would buy a lot of white paint. Enough, Business Week estimated, to cover 2000 square meters with high-quality white paint.

Should alternative electricity-producing products be replaced by white roofs, lighter roads and parking lots? No. You cannot use the white roof to produce electricity to power your refrigerator, water pump or even charge your new iPhone. But, some experts have put the estimate of savings by painting roofs light colors at $750 million

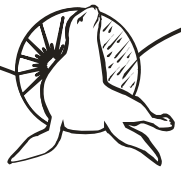
The balance will be between greenish solutions of simplicity and the greenish solutions – for a number of reasons – that are the stuff of technology and public relations.

NPR has a podcast of “Morning Edition” that reports on a new solar energy business where solar energy producing companies sell large stores and chains on allowing them to install photo-voltaic panels on their large roof areas. The energy produced by the panels is then sold to the store at rates that are lower than the big utilities charge. The store can then advertise itself to the community as “green”.

Would I paint a house in the Hudson Valley of New York white roofed? No. Much of the year is spent trying to capture every fleeting draft of heat, the wood stove stoked and the furnace roaring while that Nor'easter roars outside and the world becomes deeply white.

There are an amazing number of new technologies waiting, offering themselves, or in the gleam of the inventors' eyes. They could, with support, change the nature of the world into the new color of virtue – green.

Grab your cell phone, push “send” on your email, access the Net and check on the latest and greatest of new science and new ways to make the world a better place. But remember that there are times the analog phone works best, paper and pencil write a



shopping list quicker and some kids would be better off making a phone with tin cans and string than having an iPhone in their pocket.