



## Raising the white roof

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**U.S. Energy Secretary Steven Chu advocated for white roofs. California's building code encourages white-roof installation for commercial buildings. Almost overnight, the idea of turning roofs white has become a hot trend for savvy energy cost-cutters.**



Last month, U.S. Energy Secretary

Steven Chu appeared on Comedy Central's The Daily Show and told host Jon Stewart Americans should paint their roofs white to save on energy costs. It wasn't a joke, despite the format. Chu was dead serious about the benefits of installing a white roof: his mentor Art Rosenfeld, part of the California Energy Commission, says changing all of the world's roofs to "light" over the next 20 years could save the equivalent of 24 billion metric tons in carbon dioxide emissions.

The U.S. Energy Department claims a white roof can knock 10 to 20 per cent off a building's electric bill. Those kind of endorsements have given the white-roof concept a popularity boost. As the New York Times reported, more than 75 per cent of Wal-Mart's 4,268 outlets in the U.S. carry reflective roofs. The Times also noted:

**Drawing on federal stimulus dollars earmarked for energy-efficiency projects, state energy offices and local utilities often offer financing for cool roofs. The roofs can qualify for tax credits if the roofing materials pass muster with the Environmental Protection Agency's Energy Star program.**

And let's not forget that California, Georgia and Florida included in their building codes encouraging statement to add white roofs on all new commercial buildings.



So why is the white roof winning favour with scientists and states? The Times explains how solar energy delivers both light and heat, and the heat coming from sunlight is easily absorbed by dark colors. "Lighter colors, however, reflect back a sizable fraction of the radiation, helping to keep a building — and, more broadly, the city and Earth — cooler. They also re-emit some of the heat they absorb."

Money is always an issue, even at the outset. A white roof costs 15 per cent more than a darker roof.

Lane Burt, an energy policy analyst at the Natural Resources Defense Council, says the benefits outweigh the initial cost burden. Burt told CNN:

**This is a great idea. We always knew it was good, and now we're just starting to realize it's even better than we previously thought.**

Blogger Seth Shostak wants to take the paint-the-city-white one step further: whiten our roads. He recently suggested in a Good Magazine post to construct white pavement with black stripes.

**Not only will this improve your ability to follow the road at night (while simultaneously lining the pockets of construction workers nationwide), it will more than double the amount of sunlight reflected by roads—and thereby reduce the amount of atmospheric heating.**

He calculates the white-road initiative would reflect around 5 trillion watts skyward.

He couldn't help but add: "In other words, we could save the Greenland ice cap with road crews."