

White roofs cool energy bills

Source: [Washington Post](#)

By Sean O'Driscoll

NEW YORK -- Herb Van Gent points his infrared gun at a square of still-unpainted gray shingle and clicks the trigger. He gets an immediate temperature reading: 143 degrees and rising. Then he aims it five feet away to a square of roof I have just painted: 98 degrees and decreasing.

He smiles.

"A 45-degree difference and we're only on the first coat," he says. That means it also will be cooler inside the building, saving energy, he says.

It's 11 a.m. and we are on the roof of a New York City retirement home, rolling out a thick, shiny white paint. Van Gent is one of a volunteer group that has come to paint the roof as part of a [city-sponsored "cool roof" program](#).

The idea of painting roofs white is catching on across the country; [Energy Secretary Steven Chu has said it could help in the fight against global warming](#).

"Cool roofs are one of the quickest and lowest-cost ways we can reduce our global carbon emissions and begin the hard work of slowing climate change," Chu said in July, while announcing that Energy Department buildings would be painted white wherever possible.

Although white roofs keep homes cool in summer by absorbing less heat, they have little impact on winter heating bills, according to the [Cool Roof Rating Council](#), a nonprofit group created in 1998 to research and implement the technology. That's generally because the sun is less intense in winter, the group said, and less important as a heat source. The roofs do not let any more heat escape than other roofs, it said.

In [Arizona](#), cool roofs are mandatory for state and state-funded buildings, while [Philadelphia](#) has an ambitious green-energy plan that put cool roofs at its center.

In New York, with Mayor Michael Bloomberg's blessing, the Department of Buildings and other public and private groups have vowed to paint 1 million square feet of roof on city-sponsored community buildings. Organizers have advertised on Craigslist for volunteers, promising that the painting is rewarding and fun.



I decided to give it a try.

There were a half-dozen volunteers on the roof that day from Wayne, N.J.-based GAF Materials, which supplied the reflective white paint. Among them was technical specialist Steve Hecht, who showed me how to spread the paint.

"This should bring the temperature down 50 or 60 degrees," Hecht said as I rolled a coat onto one small area.

Proponents say the idea is as sound for private homes as it is for big, residential apartment buildings. The Cool Roof Council provides information on materials and resources at its Web site, <http://coolroofs.org>.

Philadelphia recently held a "cool roofs for free" competition, and a block of rowhouses won.

"The biggest difference is definitely when we wake up in the morning," said Terry Jack, who organized her block's winning entry. "I noticed the difference the very next morning after they painted the roof. It was a good 15 degrees cooler inside; it was much more livable." Workers are painting the roofs on both sides of her street with reflective white paint, and they're insulating the houses. City officials hope to show that a white roof will reduce the amount of air conditioning used, saving energy and lowering electricity bills.

According to former [California energy](#) commissioner Arthur Rosenfeld, an average, 1,000-square-foot roof painted white can save 10 tons of carbon dioxide, the equivalent of emissions from one car for about 2 1/2 years. On a national scale, turning roofs cool could eliminate 2 billion tons of carbon dioxide, about the same as taking 20 million cars off the road for 20 years, according to Rosenfeld, who carried out his experiments with [Hashem Akbari](#) at the Lawrence Berkeley National Laboratory in California.

So far, many cities have been limited in their response. New York's 1 million square feet of white roofs is a "very, very, very, conservative target," said Akbari, who advised the city on its NYC Cool Roofs project.

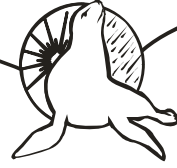
"When you consider that a large box store or mall can have a roof of 200,000 square feet, the entire New York program is the equivalent of painting five of those stores," he said.

But Akbari emphasized that it's not just about white paint.

"Certainly, the white color helps, especially if it's special reflective paint, but ultimately we want to see people using cool roof material when they have to change their roofs," he

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said. "There are a whole range of materials that can reflect the heat." Sophisticated white roofing material can lie underneath a roof's visible surface, he said, reflecting the sun's heat while allowing a wider choice of colors on the surface.

"Definitely, aesthetics has held back the cool roof movement until now, but that is changing. You have a longer lasting roof without having to look bad," said Akbari.

According to the Energy Department, there are no federal tax credits for roof coatings, but there is a tax credit for using cool materials when replacing a roof.