



## Roof Colors Become Hot, Or Cool, Topic

Source: [Oregon Public Broadcasting](#)

Author: Rob Manning

Used to be that nobody gave much thought to the color of a building's roof. But that's changing. In the last few years, energy producers and conservation groups have eyed big, flat roofs as fertile ground to produce energy, or improve the local environment.

There was a book published years ago called "What Color is Your Parachute" meant to help people figure out what job they're best suited for. Now, scientists are looking closely at the tops of buildings by asking a similar question about rooftops.

[Portland State University](#) engineering professor, David Sailor admits that color-coding the roof debate oversimplifies things.

"But just last night, I was submitting an abstract for a conference, and title of that abstract was 'white, black, or green – question mark'," he said.

So it's shorthand – but in some cases, the color ideas are quite literal.

Last spring, Energy Secretary Stephen Chu advocated "*white roofs*." In this [on-line video](#), Chu stresses the benefits of painting *roofs white*. "If you use a *white roof*, and you happen to have air conditioning, depending on the geometry of the building, you can save 10, as much as 15 percent decrease in energy, by just simply having your *white roof*," he said. The color white reflects the sun's energy upward and keeps heat off the building as a result. That's a benefit in the hot summer, but can lead to higher heating bills in the winter.

Multnomah County leaders say that *white roofs* are likely in the near future, but to date, the Portland area has focused more on two other roof colors: what David Sailor would call "black" and "green." Black roofs are covered with solar panels; green with plants. City officials and environmentalists recently toured downtown Portland with Dusty Gedge. He's a visiting "green roof expert" from England.

Gedge said that like Secretary Chu's "*white roofs*," Portland's "*green roofs*" have been focused on one problem. "The thing with Portland, Portland is actually famous for its work on stormwater and all these rain gardens, and one of the leading cities in the



states for doing green, eco-roofs for stormwater," he said. Green, or eco-roofs absorb water. So they're helping Portland's multi-million dollar effort to keep stormwater out of the sewer system.

Too much water in that system sends sewage into the Willamette River and causes health risks and environmental problems. But Gedge said green roofs can do a lot more than manage stormwater. "It's not saying, "Oregon's, or Portland's behind the times," or done anything wrong. It's saying "Now - that it's successful, what's the next stage?" Can we now improve them from a nature conservation point of view, in terms of making our roofs more reflective of the habitats and species associated with the Columbia Gorge and some of your drier habitats, which you're losing?" Bob Sallinger, with the Audubon Society of Portland is looking down on a nearby rooftop garden from an apartment building window. The garden has orderly rows of green plants.

Sallinger said birds like variety. "Creating different heights of the eco-roof materials, so there's some diversity to the landscape, adding some woody materials, um, maybe even putting in some blue roofs to retain the rainwater for a while, so there's a water source up there." Yes, Sallinger has added another color to the palette: blue, for water.

Multnomah County chair, Jeff Cogen, supported black roofs, when the county installed solar panels on two county buildings. But he says two other properties "went green." "Part of it has to do with what the location is. For example, at the downtown library, where we put the new eco-roof in, it's surrounded by tall buildings – so solar wasn't really a viable option," he said. And sometimes, the solution isn't one or the other. It can be both. English eco-roof expert, Dusty Gedge, said adding the black of solar panels can actually help meet the wildlife goals of green roofs. "We call them A-frame panels, they're ones which are up vertical and then on a slope. You create two other micro-habitats for nature because you've got shade, and you've got wet at the bottom of the slope, and you've actually increased the biodiversity bit," he said.

The benefits go both ways – says PSU engineering professor, David Sailor, because the green roof keeps the solar panels cool. "And at the same time, the vegetation provides a cooler surface that's radiating to the underside of the panels. And panels, photovoltaic panels, at least traditional technology, runs more efficiently when it's cooler," he said. Sailor has a three-year federal grant to look questions like what makes the most efficient mix of roof colors.

Portland city officials aren't waiting for that. They're developing a tax credit that might be worth up to \$2,500 for combined green-and-black roofs.