

COVER STORY

ROOFING STORIES AND EVENTS THAT ARE MAKING HEADLINES



GREEN ROOFS ARE WHITE-HOT

What's green and white all over? The future of roofing.

As energy costs soar and environmental awareness heightens, the idea of green roofing is becoming increasingly popular. From solar panels on desert homes to garden roofs on municipal buildings, the scope of green roofs is wider—and demand is higher—than ever before, and will probably only continue to grow.

The United Union of Roofers, Waterproofers and Allied Workers is dedicated to bringing you the most comprehensive and up-to-date training available for these types of roof systems. Whether installing photovoltaics, vegetative garden roofs or a “cool” white roof, union roofers are at the forefront of the movement.


Currently the International Union's Research & Education Department is working on developing a curriculum and training materials that address the many aspects of green

roofing. Instructor and student manuals are underway, and green roofing will soon be standard in the national apprenticeship program curriculum.

Local 58 roofs world's largest wind turbine manufacturing plant

Colorado Springs, CO-based Central States Roofing is already well schooled in the arena of white roofs. The Local 58, Colorado Springs, CO, contractor recently completed a mammoth 4,300-square white roof atop Vestas Towers in Pueblo, CO. Vestas is a global wind turbine manufacturer based in Denmark, and the new Vestas Towers is the largest wind-turbine tower manufacturing plant in the world.

The revolutionary facility allows all facets of tower production to be completed in one location for the first time ever.



A Local 58 member working on Vestas Towers prepares roof edge for installation of polyisocyanurate insulation.



Ready for the membrane.

Its location in Colorado is significant because it will allow a larger percentage of components for wind power projects to be made in the U.S.A.

With quality and safety being the top priorities for the project, Central States Roofing was selected to lay the 430,978-square-foot roof. Members of Local 58 spent weeks installing the white roof system on the Vestas plant, weathering the cold, the heat and the many afternoon rainstorms typical of Pueblo's climate.

Custom-Fabricated by Central States Roofing

The intense heat of the near desert-like conditions in Southern Colorado made the cool-roof system the logical choice for the building, which incorporated other energy-saving facets into its design to reduce energy consumption and waste generation.

The roof was custom-fabricated by Central States Roofing and consists of two layers of 3" polyisocyanurate mechanically attached to 45mm white TPO Firestone membrane. The materials have a high Solar Reflective Index (SRI) in order to reflect more sunlight and naturally cool the building.

Cooling more than what's under the roof

The physics behind white roofs is simple. Solar energy delivers both light and heat, and the heat from sunlight is absorbed more by dark colors. A dark-colored asphalt roof, for example, can rise to 180 degrees on a hot summer day.

Lighter colors, however, reflect back a sizable fraction of the radiation, which helps keep the building—and, more broadly, the city and Earth—cooler. They also re-emit some of the heat they absorb.

“Make It White”

Studies have long shown that white roofs reduce air-conditioning costs by 20 percent or more during hot, sunny weather. Lower energy consumption also means fewer of the carbon dioxide emissions that contribute to global warming. Furthermore, a white roof can cost as little as 15 percent more than its dark counterpart, depending on the materials used, while slashing electricity bills.

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U.S. Secretary of Energy Steven Chu, a Nobel laureate in physics who strongly advocates alternative energy research, has been promoting white roofs at home and abroad. “Make it white,” he advised a television audience on Comedy Central’s “Daily Show” last year.

Can White Roofs Cool Our Cities?

A new study conducted by the University Corporation for Atmospheric Research (UCAR) suggests that widespread use of white roofs has the potential to significantly cool cities and mitigate some impacts of global warming, at least in theory.

Tall structures and artificial surfaces found in abundance in cities, such as asphalt roads, tar roofs and concrete, absorb heat from the sun, creating an “urban heat island” effect that can raise temperatures by about 2 to 5 degrees compared to rural areas. White roofs would reflect some of that heat back into space, thereby cooling temperatures.

Research shows that some cities would benefit more than others from the extended use of white roofs. For example, cities where roofs make up more of the urban surface area would cool more. A lot also depends on geographical location: White roofs tend to have a larger impact in relatively warm climates that receive strong, year-round sunlight.

We won’t know how much of an effect widespread white roofs will have until it becomes reality. But it might mean roofers have a whole lot of “white” in their future.



A close-up of the skylight and cricket on the Vestas project. Local 58 members begin rolling the TPO in the background.



Metal decking before it's covered with insulation.



An aerial view of Vestas Towers with the white roof partially completed.



Local 58 roofers John Snyder, Rino Roussel and Miguel Estrada put the finishing touches on the Vestas roof.

