

Banking on reflective coating

White roof adds light, cuts heat at bank headquarters

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Energy-efficient roofs don't have to have plants sprouting from them to be "green." They can be flat. And they can be white.

Just ask Nate Baum of Susquehanna Bancshares Inc. The company recently had roof problems at its corporate headquarters in Lititz.

Though the black rubber membrane was basically sound, water was leaking through seams and flashing joints, and seeping into the insulation.

The conventional solution would have been to tear off the roof and replace it.

After doing research and consulting with a roofing contractor in Ephrata, banking company officials decided instead to have the roof coated.

Last year, the contractor, Gooding, Simpson & Mackes Inc., fixed the leaks and then installed a waterproof, highly-reflective urethane "Geogard"® layer manufactured by Republic Powdered Metals, Medina, Ohio.

The bank saved hundreds of thousands of dollars by choosing the coating, according to Baum, a facility supervisor.

It kept a large mass of waste rubber out of landfills, which are charging more and more to accept such material.

And it received a significant energy-efficiency boost.

Because the roof is white instead of black, it reflects solar rays back into the atmosphere instead of absorbing them. Air conditioning units no longer have to work as hard to cool the



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Above: Even on a sunny day, the new surface of Susquehanna Bancshares' corporate headquarters in Lititz is cool enough for Nate Baum, a facility supervisor at the bank, to put his hand on it.

Right: The sawtooth configuration allows the white roof to bounce light into the building, cutting down on the amount of artificial light needed.



Roof: Coatings are now booming

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building.

Roof coatings have existed for decades, said Tony Clapperton, the Republic Powdered Metals regional sales manager for the mid-Atlantic and New England states.

Coatings have long been popular in places like Florida and California, he said, but they're now rapidly gaining ground north of the Mason-Dixon line.

Despite the tanking economy, Clapperton said, RPM has been adding 20 sales people a year. "There's so much opportunity in this business."

A peek at the predominantly dark, flat surfaces that make up Lancaster city's roofscape suggests acres of potential.

"There's millions and millions and millions of square feet out there that can and should be coated," Clapperton said.

Miracle in a can?

Such buildings as schools, hospitals, factories — and their roofs — are big environmental players.

In this country, according to the nonprofit United States Green Building Council, buildings of all varieties account for 39 percent of carbon dioxide emissions and 70 percent of electrical use.

Neither the figures nor the industry trends were lost on RPM, according to Clapperton.

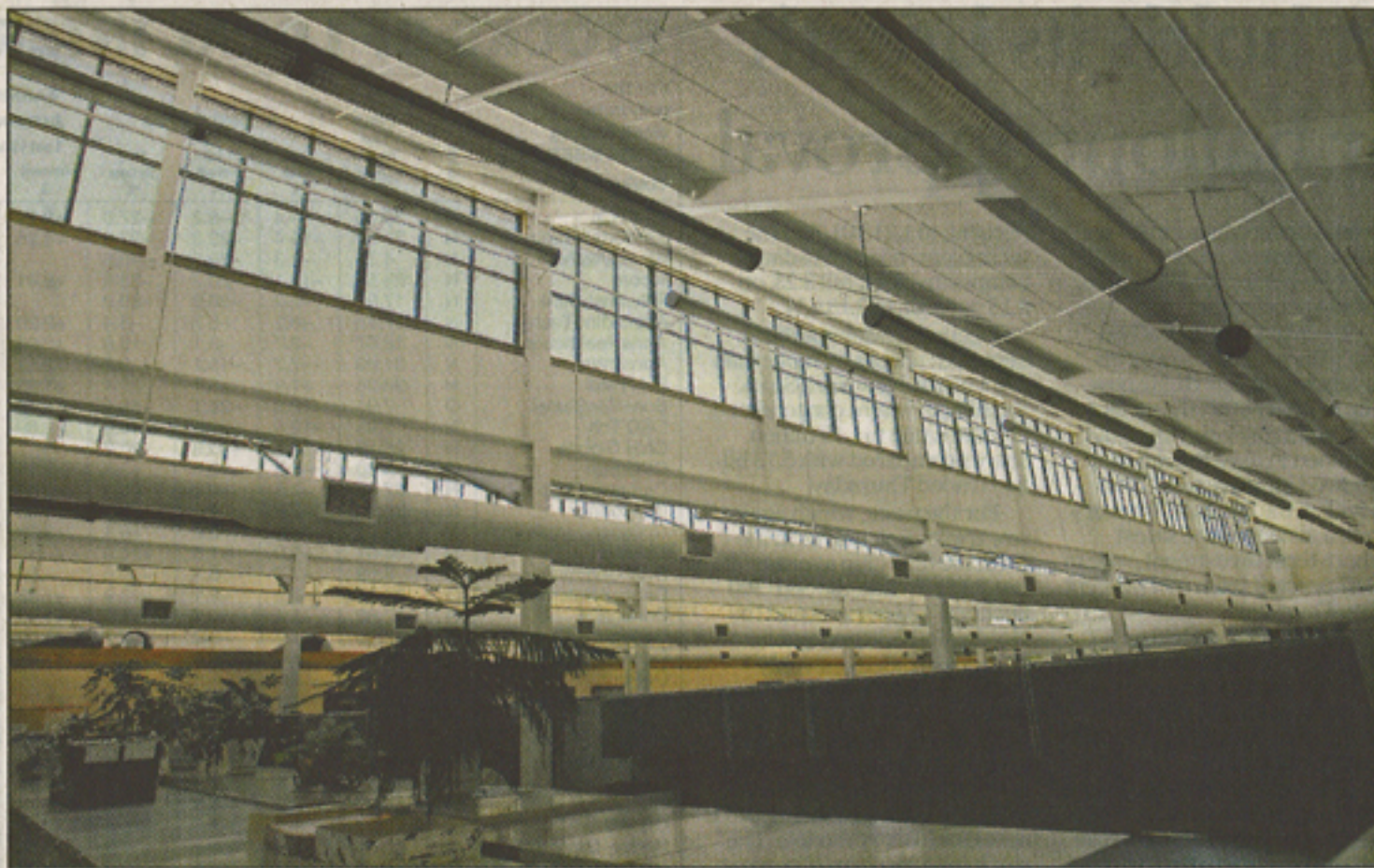
In 2000, the 61-year-old company retooled its manufacturing plant to reflect a surge in the coatings market.

Before that, Clapperton said, traditional membranes made up 65 percent to 70 percent of RPM's business and coatings about a third. Now, it's the other way around.

Geogard debuted in the mid-1980s.

The product meets federal pollution control standards because it emits fewer than 50 grams of volatile organic compounds per liter, Clapperton said.

He added that buildings



Jeff Ruppenthal/Sunday News Photos

Reflected light from the roof windows illuminates the interior of Susquehanna Bancshares corporate headquarters in Lititz.

with Geogard earn U.S. Green Building Council certification points.

Geogard is one of three RPM coating systems approved by the federal Energy Star program, according to Penny Gift, project manager.

The other coatings are aluminum and acrylic-based.

Roof restoration projects extend the life of a roof by filling in sun-induced cracks and alleviating brittleness, and may qualify businesses for tax credits, Gift said.

Steve Ballentine, who handles sales and technical work for Gooding, Simpson & Mackes, became a Geogard convert years ago.

Applied at 50 square feet a gallon, he said. "It has more substance to it than paint," which typically goes on at 50 square feet per gallon.

Such products are not quite "a miracle in a can," however, acknowledged Ballentine, who also works with vegetated green roofs.

Coatings are typically applied to commercial roofs, Ballentine said. Generally, they're less widespread in colder



The white surface on the bank's sawtooth roof is angled toward each bank of windows.

regions, where absorption of solar heat in the winter might be desirable, and most effective in urban environments, where they can mitigate the "heat island" effect.

A coating is not necessary

on a new roof, he added, and "it's not designed to be under continuous ponding water."

But he said coatings are ideal for many venues, one of

which was the bank project.

In the summer of 2006, he and Baum climbed through a hatch and toured the entire 60,000-square-foot Susque-

hanna Bancshares roof.

Erected in 1935 and formerly used as a mill, the building has an angular profile up top — a flat area punctuated by steeply pitched, windowed sections that jut like sawteeth.

The comparatively low cost of covering this distinctive terrain with Geogard was attractive, Baum said. So were the potential energy savings.

The 12-year warranty on the coating job was the clincher.

"We thought it was a good fit for our facility," Baum said.

After work started in fall 2006, the company learned that the surface temperature of the coated portion was 105 degrees on a warm day, 40 degrees cooler than the original roof.

And in 2007, the bank discovered that the reflective coating was delivering an added, unexpected benefit.

Baum said the Geogard was bouncing so much light through the clerestory windows that workers on the top floor no longer needed artificial illumination on sunny and partly cloudy days.

This spring, the banking company installed sensors that automatically switch off the top-tier bulbs when reflected sunlight reaches sufficient intensity.

"It's a lot of heat load reduction in the interior," Baum said, "and it's several hundred lights we're talking about, not just a few."

Baum said he was unable to quantify the energy savings because the administrative building houses more workers and equipment than it did at the start of the project two years ago.

However, he said, the benefits are significant enough that the bank is budgeting money for coating projects next year at some of its 230 branch offices in Pennsylvania, New Jersey, Maryland and West Virginia.

RPM's Clapperton called the growth potential for roof and wall coatings of all kinds — and the environmental boon — "just so huge it's unbelievable."

"These kinds of times don't hurt us as much as others because if your roof's leaking you have to do something about it," Clapperton said. ■

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