

Wright-Foundation Designed Home Features Innovative Copper Shingles

In designing an elegant private home in which the roof is the primary design element, the legendary architectural group—the Frank Lloyd Wright Foundation—has selected a new, non-traditional roofing product: Copper shingles.

"We wanted a subtle, almost hidden house in downtown Denver, but one with a striking roof that would symbolize shelter," reports Charles Robert Schiffner, a prominent architect with the Wright Foundation and chief designer of the Denver house.

"When the new copper shingles were brought to our attention, we realized they had all the qualities we were seeking: powerful imagery, terrific color, and a shadow line and look that says 'home' rather than carrying a commercial connotation," he continues.

Bonus of Copper

"Another extraordinary—and in a way unexpected—bonus of the copper shingles is that they set the standard, became the pacesetter for the entire project. Subcontractors, and everyone else involved in the project, immediately understood the standards expected of them when they saw these copper shingles being installed," Mr. Schiffner explains.

The copper shingles, from Zappone Manufacturing Co., Spokane, were brought to the attention of the Frank Lloyd Wright Foundation by CDA as part of its nationwide program of working directly with architects and contractors on copper metals building systems. CDA has been interested for some time in the market potential of the new copper roofing shingles.

Mr. Schiffner also is enthusiastic about the copper shingle as a product, quite beyond how they look and work on his new Denver project.

"The new copper shingles don't pretend to be wooden as aluminum roofing shingles do. They are designed to look like copper, to take advantage of copper's inherent properties.

Surface Is Ideal

"The pebbly surface is ideal for patination, the dimple adds a design element and allows you to walk on the shingle, and even the size of the shingle is relative to the template size of copper sheet. All this is pretty rare today, when so many things are designed to look like what they are not," Mr. Schiffner says.

The new copper shingles are easier to install than any other roofing methods. "Actual installation is really quite simple—just snap two copper shingles together, and then put in two copper nails. No highly skilled craftsmen are needed here," the architect says.

Copper shingles also are "more forgiving of specific job conditions than most other roofing media," Mr. Schiffner continues.

"You can mold copper shingles to given circumstances. Take a small discrepancy where the ridge meets the hip of the roof. With many roofing methods, solving that particular problem would be most difficult indeed. But with copper shingles, it's a snap," declares Mr. Schiffner.

The architect also believes that, as good as these copper shingles look today, they'll become even more handsome in the weeks and months ahead as they season and weather."

"The virtue of copper shingles versus traditional standing-seam copper—which is a beautiful roofing medium, too, make no mistake — is that the copper shingles should patina more 'gracefully,' in my opinion. The fact they are individual shingles with a pebbly texture rather than long strips of flat copper sheet means they will develop in varying but blending hues, creating a wonderfully mottled or dappled effect," he says.

From the front, the 3,000 squarefoot copper shingled roof—after an abrupt slice on the left—fans out toward the street at a steep 30 degree decline. The roof is punctuated by a large skylight and a hexagonal "tower" containing the chimney plus various passive heating and cooling elements. The shape of the tower echoes that of a white-washed horizontal planter at the front of the house.

"We've combined a subtle, almost hidden exterior with a radical layout inside," the architect says.

All major rooms have sliding glass doors leading into the central atrium or solarium, which is the heart of the home's passive heating and cooling systems.

Sun-warmed Floor

Here, in the winter as warm air rises naturally from the sunwarmed, energy-retaining tile and concrete floor resting on two feet of pebbles, warm air is captured at the ceiling through an air-return grill and channeled back through the house.

In the warm months, cool air is drawn into the house from the outside to induce a gentle breeze through all major rooms opening onto the atrium. After the cool air has circulated and become warm, it is exhausted out either through the hexagonal "tower" on the roof or the clerestory windows at the rear of the house.



The Frank Lloyd Wright Foundation, the legendary architectural group at Taliesin West in Scottsdale, selected a new, non-traditional roofing product — copper shingles — for an elegant private home in Denver because the copper shingles have 'powerful imagery, terrific color, and a shadow line and look that says 'home,'" reports Charles Robert Schiffner, (above) principal architect of the house.



With its steeply-slanting, copper-shingled roof as the chief design element, this three-bedroom Denver home is screened from view by prominent exterior walls and a horizontal planter. The 4,250 square-foot residence was designed as a "subtle, almost hidden house" by the Frank Lloyd Wright Foundation.



Particularly for complex roofing shapes, new copper roofing shingles are "ideal because they are so easy to work with," reports Craig Turner, project chief for the new Frank Lloyd Wright Foundation designed home in Denver.



"New copper shingles can be installed easier than almost any other roofing method. Just snap two copper shingles together, and then put in two copper nails. No highly skilled craftsmen are needed," says the principal architect of this Denver home and member of the legendary Wright Foundation.

So sure is the architect that the passive cooling system will work that the house has no mechanical air cooling system. The home's passive heating system is assisted by a natural gas system.

Major rooms opening onto the atrium include the 36-foot long entertainment space, which includes what traditionally would be thought of as the living room but here is called the study, plus the formal dining area with fireplace. Other atrium-connected rooms include the master bedroom, and the kitchen and informal eating area.

Continuity of Space

"We tried to create great continuity of space here, with all areas flowing into each other with remarkable ease, and with most rooms focused on the central atrium. This is opposed to the more conventional format, little segmented boxes with restrictive openings for passage," he says.

"Although this kind of 'organic' approach to space is one of the concepts to which the Frank Lloyd Wright Foundation is dedicated, the site itself also demanded such an approach. In this upper class but densely packed neighborhood, there can be no existing view except the busy thoroughfare in front or the neighbor's wall and windows. So we decided to create our own interior view: the glass-walled, plantfilled, towering atrium.

Partially as a result of this "no existing view" idea, and partially because of the desire to get a maximum amount of living space on a very minimum city lot, the architects decided on a series of strong horizontal elements to mask the house from the street, such as white-washed walls and planters, with basically only the copper shingled roof showing.

"We hope there's a bit of mystery created here, but more important sense of privacy, of hidden well-being," Mr. Schiffner declares.

For maximum temperature control, the house nestles into the earth on two sides, with the earth berms reaching a height of about four feet.

Agreeing with Mr. Schiffner on the beauty of the new copper' shingles-and particularly on the ease of installation-is Craig Turner, project chief on the new Denver home and an officer with Newport Co., Denver general contractors.

"This is a very complex roof design: difficult hips and valleys, a large skylight, clerestory windows in the rear. But with the comparatively small, individual copper shingles, when we ran into a trouble spot, we simply cut and patched right there on the roof," he explains.

Prevented All Leaks

Mr. Turner admits he was a little skeptical when he first heard that copper shingles had been selected for the job. "I not only wondered how difficult installation might be, I also worried about leaks. The men caught on right away, as I've said. And the exact fit, the tight interlocking, of the individual shingles prevented all leaks, even during installation and we had both rain and snow."

Mr. Turner reports he is seeing increasing numbers of new copper roofs in Denver on both residential and commercial buildings.

"There's a new commitment to long-term quality," he explains. "People now believe they'll be staying a long, long time wherever they are. So all materials and systems had better be top-notch. More and more people are telling me when they see this new house, 'That's the way to go: Copper.' "

For additional information on Zappone copper shingles:
Write Joe Zappone at Zappone Manufacturing Co., N. 2928 Pittsburgh,
Spokane, Wash., 99207, or
telephone 509/483-6408.



Joe Zappone, head of Zappone Manufacturing Co., Spokane, poses with one of the 8½-inch by 15-inch copper shingles used in the dramatic Wright-Foundation designed home in Denver.