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On the roof, nature takes root

Eco-friendly style of building creates believers in Metro

By MICHAEL CASS
Staff Writer

Even butterflies and bees have found their way to the top of The Westview.

The roof of the downtown condominium building is eight stories up. But its 6,000 square feet are covered with plants, bushes and trees, all growing in a lightweight aggregate material.



It's one of Nashville's first "green" roofs, representing an environmentally friendly building technique that has been steadily gaining steam among many Metro planners, elected officials and even developers who are incorporating the method into new projects.

They see a way to enhance air quality, lower temperatures, control storm-water runoff and provide a healthier environment.

"This is truly a representation of what green roofs can be," said Ralph Velasquez, a Nashville-based sustainable development specialist who helped design The Westview's roof last year.

"I'm banging the drum all the time. I think it's a great technology," added Velasquez, whose voice-mail greeting tells callers he's "out saving the world, one green roof at a time."

The green roof approach was developed in Europe, especially Germany, more than 30 years ago, said Rob Berghage, associate professor of horticulture at Penn State University's Center for Green Roof Research.

Portland, Ore., was the first American city to embrace green roofs, but Chicago "pushed harder," Berghage said.



[enlarge](#)

The Westview, an eight-story condominium building downtown, has native Tennessee plants covering its 6,000-square-foot roof. "Green" roofs are planned elsewhere in Nashville, including on a proposed Westin hotel and several condo projects. (MANDY LUNN / THE TENNESSEAN)



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Public Square outside the Metro Courthouse features more than 2 acres of vegetation atop an underground parking garage. (LAVONDIA MAJORS / STAFF)

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PUBLIC SQUARE HAS ROOF ON THE GROUND

Nashville's largest green roof is actually one you can get to without taking the stairs. The new Public Square park outside the Metro Courthouse features more than 2 acres of vegetation. It sits on top of the underground parking garage that serves the courthouse and other nearby buildings. Kim Hawkins, a landscape architect in Nashville, said rain that falls on the Public Square either gets absorbed by the grass and plants or goes into a 50,000-gallon "rainwater harvesting tank," which pumps it back out to irrigate the park. "It's a great way to use the water nature gives you," Hawkins said.
— MICHAEL CASS

Larry Merritt, a spokesman for the Chicago Department of the Environment, said Mayor Richard M. Daley brought the idea home from a trip to Germany in the late 1990s. Chicago's 12-story City Hall got a new, green roof in 2000.

The benefits arrived quickly — just like the crickets and grasshoppers. The temperature on the City Hall roof is as much as 70 degrees lower than the mercury reading on the black tar roof of the adjacent Cook County Building, Merritt said.

Six years after the City Hall roof went on, Chicago has 250 green roofs either completed or under way on public and private buildings, including schools, libraries and fire stations. Some 2.5 million square feet of rooftops are green.

"People are excited about this," Merritt said. "It's not a hard sell. ... You can imagine if the temperature on your roof was 70 degrees higher, you'd have to compensate with how hard you run your air conditioning."

Now Metro Nashville is starting to move in the same direction. Developers of a proposed Westin hotel downtown have committed to giving it a green roof. Developers of several condominium projects — Terrazzo in the Gulch, 5th and Main in east Nashville, and the Adelia in Midtown — are doing the same, said Kim Hawkins, a landscape architect who has designed several green roofs.

"We felt it was important to take a really strong leadership role," said Bill Barkley, president of the Tennessee division of Crosland, the company developing Terrazzo. "We hope other people follow suit."

Barkley said the project would cost more for extra waterproofing and drainage controls. But he said he expected to get that money back over time through reduced energy costs and "a more functional building" that will make a statement to tenants.

Hawkins and Berghage said the premium paid for a green roof was generally \$10 to \$15 per square foot.

The Metro Planning Department also is working to encourage more green roofs. Its new downtown planning guidelines will call for green roofs or other sustainable components on any new buildings, said Hilary Kahnle, the department's design studio manager.

"With the amount of development we've got going on here, we're going to have so much density occurring in places like SoBro (the area south of Broadway)," Kahnle said. "We think it will be important to have an alternative like the green roof for storm-water issues and air quality."

Kahnle said she didn't expect Metro to offer incentives to developers for green roofs alone, though broader efforts to build environmentally friendly structures could be rewarded with chances to build more square footage than would normally be allowed. The Planning Department and other officials also want to see more buildings certified under a set of standards known as Leadership in Energy & Environmental Design, or LEED.

Mayor Bill Purcell, who said his administration has been looking closely at the issue, said economic incentives would not be necessary.

"It's an open question whether other kinds make sense," Purcell said. "It may be that a builder receives some exemptions."

THE BENEFITS OF GOING GREEN

Advocates say the benefits of green roofs are clear:

- Air quality improves.
 - They reduce the roof temperature, which reduces cooling costs.
 - A large cluster of green roofs can reduce the urban "heat island" effect, lowering the temperature produced by asphalt and other heat-trapping surfaces.
 - The roofing membrane lasts two to three times longer because it isn't as exposed to the elements as it normally would be.
 - Having an accessible garden or park on top of a building tends to make it more attractive to residents and workers.
 - More stormwater goes back into the atmosphere, which lessens the load on the sewer system.
- The biggest drawback is cost. A green roof can cost developers an additional \$10 to \$15 per square foot. But supporters say that money comes back eventually in the reduced energy and roof replacement costs.
- MICHAEL CASS

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Councilman Mike Jameson, who pressed the developers of the proposed Westin hotel to make their roof green, said green roofs are "the most visually appealing" of environmentally sound building measures.

And now that developers can recoup their investments pretty quickly, there's no reason not to do it, Jameson added. "Not only is it a no-brainer environmentally, but it's reached the point where it's a money-saver," he said.

On The Westview's roof, residents have great views of the city as they sit or stand amid the greenery, all of which is native to Tennessee. There are tables and chairs, a patio and a grill.

Velasquez said residents had identified the green roof as their top reason for buying in The Westview, which is at Ninth Avenue North and Church Street.

"This is their back yard," Velasquez said. "It's literally their garden space."



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