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On K Street, a Building With a Cultivated Facade

Green Roof Called Environmental Boon

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Monday, June 28, 2004; Page B02

Dawn Gifford had been looking for a roof she could turn green when she met Barbara Deutsch at a rooftop ceremony in 2002.

As the two stood 12 stories above K Street NW, Deutsch, senior director of Casey Trees, remarked, "We have to do something about this roof."

Gifford, executive director of D.C. Greenworks, pounced. "How about a green roof?" she suggested.

A year and a half later, Deutsch's and Gifford's organizations unveiled what is thought to be the city's first green roof on a downtown commercial property last week at 1425 K St. NW. A phenomenon in Europe that has been catching on across the United States, with installations in Maryland and Virginia, green roofs offer a host of environmental benefits, including reduced stormwater runoff, lower building temperatures and improved air quality -- effectively reversing the impact of plant loss in some urban areas over the past 30 years.

Blake Real Estate, the building owner and a collaborator on the project, will offer tours of the roof twice a month as part of the



At 1425 K St., the 3,500-square-foot roof garden has 9,730 plants, a weather station and an unplanted area to compare temperature, rainfall and runoff.

Photo Credit: Michael Temchine -- The Washington Post

project designers' efforts to convince developers and property owners that the environmental benefits of green roofs can be achieved without unbearable costs.

A team of 12 young adults from Covenant House, which serves youths in need, constructed and planted the green roof in two weeks as part of a D.C. Greenworks training program on low-impact development and restorative landscaping.

Casey Trees Endowment Fund, a nonprofit endowed by a gift from philanthropist Betty Brown Casey, is a tenant at 1425 K St. It helped acquire \$60,000 in grants from the National Fish and Wildlife Foundation and the D.C. Department of Health's Watershed Protection Division.

According to a 1997 report by American Forests, a nonprofit conservation group, the number of acres of heavy tree cover in the District fell 64 percent from 1973 to 1997.

The surfaces that replaced trees in the city -- mostly sidewalks and rooftops -- are impervious to rainwater. Heavy rain can cause sewer pipes to become overwhelmed, leading to the discharge of untreated sewage into the region's watershed.

Green roofs help reverse that effect by restoring vegetation to absorb rainwater. Deutsch estimated that the green roof at 1425 K St. will absorb 56 percent of the rain that falls on it, significantly reducing the amount of stormwater runoff.

Green roofs also can mitigate what scientists call the urban "heat island" effect, in which hard or reflective surfaces contribute to higher temperatures in urban areas. Because heat is absorbed when the water from plants evaporates, surrounding temperatures decline.

Green roofs, because they insulate buildings, also lower building heating and cooling costs and can extend the life of roofs by reducing roof contraction and expansion.

Deutsch and Gifford said the city has the potential for large-scale environmental benefits if other building owners follow suit. Of downtown Washington's 255 acres, rooftops account for about 107 acres, according to calculations by D.C. Greenworks. Assuming 80 percent of rooftop space could become green, 86 acres could be turned into rooftop gardens and could absorb half the rainwater that falls on them.

Although environmentalists tout the virtues of green roofs, the bigger test will be convincing developers that such projects are feasible and cost-effective, said Katrin Scholz-Barth, a green roof consultant. Because green roofs can cut the cost of stormwater maintenance and of heating and cooling, Scholz-Barth said, the long-term cost of green roofs can be comparable to that of other roofs.

Joan Berman, vice president and director of property management for Blake Real Estate, said it took nearly four months of research and consultation with roofers and developers about the safety of the green roof -- whether it would leak, for instance -- to overcome her initial skepticism about the project. She said she would recommend it to other property owners.

The roof includes a 3,500-square-foot garden containing 9,730 plants, a weather station and an unplanted control area to compare temperature, rainfall and runoff.

Although this is the first green roof on a commercial property in the District, green roofs are gaining in popularity across the country. In Chicago, where 529 people died in a 1995 heat wave blamed partly on the urban heat island effect, a green roof now sits atop City Hall. Anne Arundel County, which began promoting green roofs two years ago, is building its fifth and sixth, at the West County Area Library in Odenton and the London Town Visitor Center and Museum.

Arlington County officials retrofitted the roof of the Arlington County Government Center in Court House Plaza for a green roof in October to promote the benefits of green roofs. Joan Kelsch, Arlington's environmental planner, said private developers are becoming increasingly receptive to the idea of green roofs.

"I couldn't even finish my sentence," she said of developers' reactions to her pitch in years past. "Now, they are listening."

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