Plant, mow and water the ... roof?

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George Irwin photo by

The Back Bay Tower apartment building in Portland has a version of a green roof, above, over its parking garage. A central area of plants and trees creates a small, attractive park that adds heating, cooling and stormwater functions.

Staff photo by Doug Jones

Joe Hemes of Steven Blatt Architects climbs up from the new green roof at Portland's East End Community School. Hemes designed the soil and vegetation roof, which helps to absorb and filter stormwater, cool and clean surrounding air and increase insulation capability.

A GROWING TREND

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Maine rooftops are starting to sprout grass, trees and other plants, and nobody's complaining about poor maintenance.

In fact, said Carol Dayn, the principal at Portland's East End Community School, "there's a lot to be said for it."

The new elementary school has what may be the state's first "green roof," a covering of soil and low-growing plants on a first-floor roof section just outside the second-floor window of the teachers' room.

Another living roof, one that doubles as a small park with grass and trees, was just created on top of the parking garage at Back Bay Tower in Portland.

Portland's new elevated gardens, all on flat roofs, are the first signs here of a trend that has spread from Europe and Canada into American cities and college campuses.

While they definitely are a way to dress up an ugly roof, what's really driving the trend is less visible. Green roofs absorb and filter stormwater much as fields and forests do, so less pollution washes into streams, rivers and the ocean. They clean and cool the air around the buildings. Some green roofs help insulate buildings and reduce power bills. They also protect and extend the life of the roof surface beneath them.

While the roof at the East End school no longer has the deep-green shades of summer or the spring blossoms, it's still doing its job, said Joe Hemes, an architect who designed the school for Steven Blatt Architects in Portland.

"This is the way roofs should be," Hemes said. "It solves a lot of problems."

The green roof at the East End School covers a small piece of the building -- about 1,800 square feet. A $30,000 federal grant through the Casco Bay Estuary Partnership paid for it as a small-scale demonstration project.

"Stormwater pollution is the biggest source of pollution to the bay," said Karen Young, director of the partnership.

The school, which is perched over the bay on Munjoy Hill, makes a good model.

"We wanted people to see how it looks and how it fares during the winter," she said. "Hopefully, people will be less intimidated by it after they have some firsthand experience with it."

Green roofs are not cheap to install. Simple ones with low-growing plants that require only 2 or 3 inches of soil depth start at $10 to $14 a square foot, said George Irwin of Green Living Roofs LLC, a New York company that installed the green roof at Back Bay Tower.

The school roof in Portland -- which cost almost $17 per square foot -- was pregrown in a greenhouse in Ontario and transported to Portland on square plastic pallets that sit on top of the roof. The pallets have holes so rainwater can drain through when the shallow soil is saturated. The school also put in an irrigation system in case of a long dry spell.

The school roof has several varieties of sedum, an alpine succulent that needs little soil, grows to about 4 inches and is able to withstand freezing and drought.

Other types of green roofs, such as the one at Back Bay Tower, use more soil, are heavier and are more expensive, costing from $20 to $120 a square foot, Irwin said. He would not reveal the overall cost of the Back Bay Tower project, which reflects a different priority for its owner.

"We created amenity space for the residents of the building and made that roof usable," Irwin said.
Despite the upfront expense, local architects familiar with green roofs say they can save money over time.
Reducing stormwater flows cuts costs for retention and treatment equipment, an increasingly big expense for urban buildings. The extra cover can reduce heating and cooling bills and prolongs the life of the underlying roofs.
"It's oxygen-producing. It's acoustically soft. It protects the roof. It filters the water. I could go on and on," said Alan Kuniholm, a principle at PDT Architects in Portland. "I'm contemplating doing a house with a green roof."
Green roofs are most common on large commercial buildings in Europe and Canada. American cities such as Chicago are promoting their use heavily as a way to reverse the "heat island" effect, which refers to heat trapped in urban communities by streets and roofs.
Maine is on the fringe of the trend, but there's no doubt it has arrived. More green roofs are planned for future buildings at the University of Southern Maine in Portland and the University of Maine in Orono. The University of Maine at Machias is experimenting with rooftop blueberry bushes, a project that could put a distinctly Maine twist on a worldwide trend.
The idea of a Maine-grown green roof -- or a blue roof, for that matter -- sounds good to Kuniholm. He's so sure the trend will spread that he's been trying to persuade local greenhouses to go into the roofing business.
"We should have this in the state of Maine," he said.
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