

BUILDING SERVICES MANAGEMENT

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New Add-On Service Installing and Caring for Green

Roofs

Green roofs are increasingly included in new buildings seeking LEED certification—approximately eight points can be earned by installing a Green roof—as well as older facilities seeking certification or wishing to operate their facilities in a more environmentally friendly manner.

And because building service contractors (BSCs) and other cleaning professionals are often called upon to care for and maintain these roofs, it is a good idea to know a bit about the history of Green roofs, the key reasons why customers are installing them, and what is required to properly maintain a healthy Green roof.

Short History of Green Roofs

If you were able to travel back in history a few hundred years and landed in Ireland, it might surprise you to see animals such as goats on top of someone's house eating the roof. In those days, roofs were made of sod and were often welcome grazing areas for local animals.

Because of a lack of other natural resources, and because the sod roofs provided such good protection from outdoor temperature extremes, this style of construction soon spread throughout Europe. These sod roofs were the inspiration for Green roofs.

There are now two types of Green roof technologies and two different systems for installing Green roofs. Intensive Green roofs are like gardens atop a building.

They are heavy, requiring a minimum of one foot of soil depth, with trees, shrubs, and landscaped plants.

On the other hand, extensive Green roofs, which are the type most BSCs will encounter on their customers' facilities, have as little as two-to as much as eight inches of soil, making them much lighter. They are populated with hearty, drought-resistant vegetation.

Unlike intensive roofs, which often are used as parks in urban settings, extensive Green roofs are installed for economic and environmental reasons and are generally not available for public access.

Traditionally, most Green roofs were built directly on the existing roof, with soil and plants hauled up to the roof for workers to build the Green roof much as they would create a garden. In the past few years, modular Green roofs, have been developed.

“Modular Green roof systems are a new solution for installing a permanent Green roof,” says Jeff Conroy, a principal with the architectural firm Loeb, Schollossman & Hackl, Chicago, IL. “The system consists of trays made of 60 percent recycled plastic that are pre-planted with soil and vegetation. The cost is more reasonable, and the ease of installation is so [cost] effective we are starting to see a lot more of these [modular] systems.”

Benefits of Green Roof Technology

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Why would your customers install a Green roof? Among the economic benefits, Green roof technologies have been proved to:

- Increase the life expectancy of the existing roof by as much as 40 years, effectively doubling it;
- Help add as much as 25 percent more insulation to the roof, minimizing the effect of very cold and very hot weather and reducing the energy necessary to heat and cool the facility;
- Reduce the “heat island effect” in major urban areas, which helps these areas stay cooler in summer months, reducing the need for air-conditioning systems;
- Reduce storm water runoff, which helps reduce costs to building owners and local communities for water collection, storage, management and treatment.

There are also several environmental benefits. Green roofs help filter outside air, reduce dust and smog levels, act as sound absorbers, decrease sound reflection, provide a natural habitat for birds and plants, and release oxygen into the air.

Care and Maintenance

“A well-planned, well-designed, and [properly] installed Green roof should require minimal maintenance,” says Jim Lindell, a market development associate at GreenGrid, manufacturers of modular Green roof systems. “They usually require the most attention the first two to three months after installation and then just need to be ‘patrolled’ thereafter.”

By patrolling the Green roof, he means that it needs to be checked from time to time—maybe once per month—to make sure it is doing well.

According to Lindell, once the Green roof has been installed, it may need to be irrigated occasionally to help the vegetation take root and grow. Some weeding may also be required as well as the removal of paper and other items that may get trapped in the vegetation.

“In some cases birds can be a problem,” adds Lindell. “They may eat or harm the plants. However, there are products available that can safely discourage birds from landing or marring the vegetation.”

One of the few potentially “major” maintenance problems that can occur is if the existing roof, HVAC systems, or other mechanicals accessed by the roof need service or repair. If the Green roof has been built directly on the existing roof, this may require the soil and vegetation to be dug up, allowing access to the areas needing repair, and then reinstalled.

“With the modular system, this really is not an issue,” says Lindell, “because the modules just need to be picked up and then replaced once the repairs are completed.”