

Seeing Green from Roof to Roof

Something a bit unusual is being installed atop the Augusta Medical Center College in Augusta, GA. A 2,500 square foot Green roof is about to be placed on one of the campus' buildings. Although this is a relatively small example, it is part of a growing trend that more and more facilities are installing Green roofs. A trend that is especially evident among schools and universities, healthcare centers, government and private office buildings.



Green roofs, in the simplest of terms, involve the placement of vegetation on building tops and have long played an aesthetic role that dates back to biblical times. One of the very first Green roofs found in the U.S., which is more of a roof garden than a Green roof, was placed on top of New York's Rockefeller Plaza in the 1930s. The reason: to provide office workers with a quiet and pleasing retreat from the busy city below.

Today, Green roofs are very common in parts of Europe and Japan and are relatively common at many colleges and universities. But beyond an aesthetic role, Green roofs are now being installed for much more practical and functional reasons as well.

Studies indicate that the benefits derived from the implementation of Green roofs can include:

- Cutting energy costs
- Dramatically minimizing water run off after storms
- Reduction in noise within a facility
- Helps facilities become LEED certified
- Minimizes the “urban heat island” affect found in many downtown cities
- Significantly extends roof life

In many cases, this is achieved at a relatively moderate cost and often with very little ongoing maintenance required.

There are two basic types of Green roofs—intensive and extensive. The roof garden atop Rockefeller Plaza is an example of an intensive roof. Here, as much as 40 inches of soil is filled with a variety of plants, flowers, and even trees. And, just like any garden, these roofs require a considerable amount of care and attention.

An extensive Green roof has a very thin layer of soil, typically four to six inches deep. Instead of trees and flowers, low-maintenance seedlings are planted. These very hearty plants grow well in damp as well as very dry weather conditions.

“There is a little maintenance when the extensive Green roof is first installed,” says Sandi McCullough of Chicago, IL-based GreenGrid, which installs Green roofs. “It usually just involves some weeding and transplanting within a few months of installation. After that, many just need to be monitored two to four times per year.”

McCullough also adds that there are two types of extensive Green roof systems. One system, a built-in-place Green roof, involves building the Green roof right on top of the building with landscapers and workers hauling soil, plants, and other components to the roof.

The other method, referred to as a modular Green roof, is actually a built-in nursery. Soil and plants are placed into modules made of 60 percent recycled plastic. These modules can vary in size and are either rectangular or triangular.

Similar to an assembly line, the planted modules are then transported to the roof top where they are laid out, one next to the other. The process is relatively quick, requires few workers, and tends to be less expensive than a built-in-place roof.

“With the modular system, about 3,000 square feet of Green roof can be installed in a day,” says McCullough. “This is much faster than a built-in-place Green roof and there is less danger to landscapers working atop high buildings.”

Cost has traditionally been one reason some facilities have been reluctant to install Green roofs. However, the modular system, which is relatively new, has significantly helped to reduce these costs.

“Energy, building, and maintenance costs are likely to continue to rise,” says McCullough, looking to the future. “What we expect to see happen is Green roofs, especially modular systems, will effectively become ‘cost neutral’ because of the savings they will return on energy, building construction, and roof maintenance.”

Plant life high above the ground is an unusual idea that is becoming a popular choice by some out-of-the-box thinking facilities, which are now reaping Green roof's benefits. With improvements on the way, Green roofs of all varieties promise to bring cost savings for many years to come.