

## SERVICE WORKS

## "UP ON TOP" NEWS

## Green Roofing - Vegetative Roof Systems

Green roofs involve growing plants on rooftops, thus replacing the vegetated footprint that was destroyed when the building was constructed. Germany is widely considered the leader in green roof research, technology and usage. It is estimated that 12% of all flat roofs in that country are green and the German green roof industry is growing 10% to 15% per year.

Modern green roofs can be categorized as 'intensive' or 'extensive' systems depending on the plant material and planned usage for the roof area. Intensive green roofs utilize a wide variety of plant species that may include trees and shrubs, require deeper substrate layers, are generally limited to flat roofs, require 'intense' maintenance, and are often park-like areas accessible to the general public. In contrast, extensive roofs are limited to herbs, grasses,

mosses, and drought tolerant succulents such as Sedum, can be sustained in a shallow substrate layer, require minimal maintenance, and are generally not accessible to the public.

As our forests and agricultural lands are replaced with impervious surfaces due to urban development, the necessity to recover green space is becoming increasingly critical for the health of our environment as well as our well-being.

Vegetated or green roofs are one potential remedy for this problem. Establishing plant material on rooftops provide numerous ecological and economic benefits including stormwater management, energy conservation, mitigation of the urban heat island effect, increased longevity of roofing membranes, as well as providing a more aesthetically pleasing environment to work and live.

The mitigation of stormwater runoff is considered by many to be the primary benefit because of the prevalence of impervious surfaces in urban areas. The rapid runoff from roof surfaces can exacerbate flooding, increase erosion, and may result in raw sewage that is discharged directly into our rivers. The larger amount of runoff also results in a greater quantity of water that must be treated before it is potable. A major benefit of green roofs is their ability to

absorb stormwater and release it slowly over a period of several hours. Green roof systems have been shown to retain 60-100% of the stormwater they receive. In addition, green roofs have a longer life-span than standard roofs because they are protected from ultraviolet radiation and the extreme fluctuations in temperature that cause roof membranes to deteriorate. Furthermore, the construction and maintenance of green roofs provide business

opportunities for nurseries, landscape contractors, irrigation specialists, and other green industry members while addressing the issues of environmental stewardship.

Will green roofs ever catch on in the United States

like they have in Europe? Several barriers to widespread acceptance exist such as a lack of awareness regarding green roofs, potentially higher installation costs, limited quantifiable data pertaining to the benefits they provide, no technical information on how to build them, and a lack of government incentives or tax breaks. However, all of these problems are currently being addressed. These barriers are not insurmountable, as the same barriers have been overcome in Germany. In the U.S. the concept of green roofs is just now being introduced and will likely become more common in the future.



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