



# GREEN INFRASTRUCTURE in New Jersey



## PRACTICES

### GREEN INFRASTRUCTURE PRACTICE: GREEN ROOFS

Green roofs are roofing surfaces that are partly or completely covered with vegetation. Green roofs provide stormwater management by slowing down rainfall and by allowing a portion of the precipitation to be returned to the atmosphere through evapotranspiration. There are two main types of green roofs: extensive and intensive.

#### HOW IT WORKS:

Precipitation that falls on the green roof is either taken up by the plants, which return it to the atmosphere, or slowly drain through to the planting media into the storage bed and drainage system below. Some of the water that passes through the planting or growing media remains in the soil. The portion that makes it to the storage slowly drains off the roof through a structure. Green roofs have been shown to hold a significant amount of the rainfall that reaches their surface in the summer, but the amount of rainfall which can be taken up by the plants are reduced in the winter.<sup>1</sup> Green roofs decrease stress on storm sewer systems by retaining and delaying the release of stormwater. Non-stormwater related benefits of green roofs include insulation and shading of the building, mitigation of the “urban heat island” effect - a phenomenon that causes cities to be a few degrees warmer than surrounding areas, and reduced air pollution and greenhouse gas emissions.

The major components of a green roof are a waterproof membrane, root barrier, drainage system, planting media and vegetation. An **extensive** green roof is lightweight, includes shallow-rooted drought-resistant plants, typically Sedum species, and requires minimal maintenance. An **intensive** green roof has a thicker layer of growing medium, so it can contain a variety of vegetation, including grasses, ornamentals, flowers and small trees. This type of green roof requires a greater weight bearing capacity and more frequent maintenance. Extensive roofs are the more typical for stormwater management purposes.

#### CONSIDERATIONS:

Rooftops must be evaluated for suitability in terms of roof load and accessibility for maintenance in advance of installation. Other factors to take into account are the height and the pitch of the roof, as well as construction and maintenance budgets. The best time to install a green roof is either during building construction or when a roof requires replacement.

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**Green Roof - Hopewell Township, Mercer County**

<sup>1</sup> [www.greenroofs.org/index.php/about/greenroofbenefits](http://www.greenroofs.org/index.php/about/greenroofbenefits)