

TAKOMA PARK'S GREEN ROOF

Green Roofs provide a number of direct and indirect environmental benefits to building users and the community in general. The Community Center green roof was funded by a grant from the Maryland Department of the Environment, through the American Reinvestment and Recovery Act.

What Is A Green Roof?

A green roof is a vegetated surface installed on a building roof or deck. The structure must be designed to support the weight of the soils, plants and moisture .

A green roof is built in layers. The first layer is a waterproof membrane to keep water from seeping below the roof surface. Next is a root barrier which keeps root growth from penetrating the waterproof membrane. This is followed by polystyrene insulation and a drain mat. The drain mat looks like a mini egg carton – its design helps distribute water and provide room for air flow to the roots. The top of the drain mat has a geo textile fabric to prevent the soil above from getting into the drainage channels. Finally the soil and plant layer are added. For this roof we used 4 inches of the soil media.

The soil mix for green roofs is very different from garden soils. It contains about 80% mineral content, like expanded slate, and 20% organic matter, like compost. The plants that are usually used are sedum mixtures because they tolerate a wide range of conditions.

What Are The Benefits?

Green roofs provide an extra layer of insulation to building roofs to reduce heat loss. A vegetated surface reduces the “urban heat island effect” created by surfaces of asphalt and concrete. The plants in a green roof filter pollutants from rainwater, like phosphorus and nitrogen. The plants remove particles from the air, like dust and heavy metals, as well as microscopic gases like ozone and CO₂. In addition, plants absorb water that would otherwise go directly into a storm drain system. On average a green roof will retain about 70% of the rain that falls on the roof.

What are the Costs?

The costs of a green roof can vary greatly. The green roof installed at the Community Center is about 4,000 square feet. The waterproof membrane cost \$30,000 and the green roof installation cost \$70,000.

What Is Required For Maintenance of A Green Roof?

For the first year or two, careful weeding, fertilization and occasional treatment with fungicide is necessary to ensure plant success. In times of drought, the green roof may need to be watered to keep the plants alive. Green roofs can extend the life of the roof membrane by keeping UV rays off the membrane surface.

