



PROTECTING AND ENHANCING THE NATURAL ENVIRONMENT THROUGH COMPREHENSIVE ENVIRONMENTAL PROGRAMS

GREEN ROOFS

Green roofs, otherwise known as live roofs or vegetative roofs reduce stormwater runoff by capturing and storing rainwater which otherwise would land on an impervious rooftop. While they can be installed on nearly any rooftop, the structure must be able to handle extra weight. The roofs are designed to support plant growth and retain water only for plant uptake. Green roofs allow water to drain vertically through the planting media, followed by horizontal draining along a waterproofed layer towards a drain. Plants which require minimal maintenance should be selected.

The term "heat island" describes developed areas that are hotter than nearby rural areas. Heat islands can affect communities by increasing summertime peak energy demand, air conditioning costs, air pollution and greenhouse gas emissions ([U.S. EPA](http://www.epa.gov)). Green roofs absorb heat and act as insulators for buildings, reducing energy needed to provide cooling and heating and reducing the "heat island effect" ([U.S. EPA](http://www.epa.gov)).

WHY IT'S IMPORTANT TO MAINTAIN YOUR GREEN ROOF

An unmaintained green roof may:

- Fail by losing plant materials.
- Grow weeds whose roots may penetrate deep and damage the roof membrane.
- Decline in diversity of plants, which leaves the green roof in danger of being affected by disease.



Sharrow School, Sheffield

Who is responsible for this maintenance?

As the property owner, you are responsible for all maintenance of your green roof.

MAINTENANCE & MONITORING

FREQUENCY*	ACTIVITY*
Spring	<ul style="list-style-type: none"> • Visually inspect and hand-weed every 2-3 weeks to prevent flowering and reseed. • Test soil and if results suggest, apply a slow-release fertilizer; avoid herbicides or pre-emergent weed control. • Monitor plant health and replace plants as needed.
Summer	<ul style="list-style-type: none"> • Visually inspect and hand-weed as needed to prevent flowering and reseed. • Note plants which are not thriving with natural precipitation; either irrigate or replant drought-tolerant plants if needed. Heat waves may warrant additional irrigation.
Autumn	<ul style="list-style-type: none"> • Visually inspect and hand-weed as many plants become dormant during colder temperatures, but weeds will continue to grow. • If irrigation system was installed, drain and winterize by mid-October. • Avoid fertilizers which may impact plant hardiness during the winter.
Annually	<ul style="list-style-type: none"> • Visually inspect the waterproof membrane for leaks and cracks. • Inspect roof drains ensuring they are not overgrown; remove any accumulated organic matter or debris. • Remember that the first year is the green roof's establishment period so ensure maintenance schedule is carefully followed. After year one, general maintenance will reduce.

* Follow manufacturer's guidelines

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<https://www.annapolis.gov/450/Stormwater-Management>

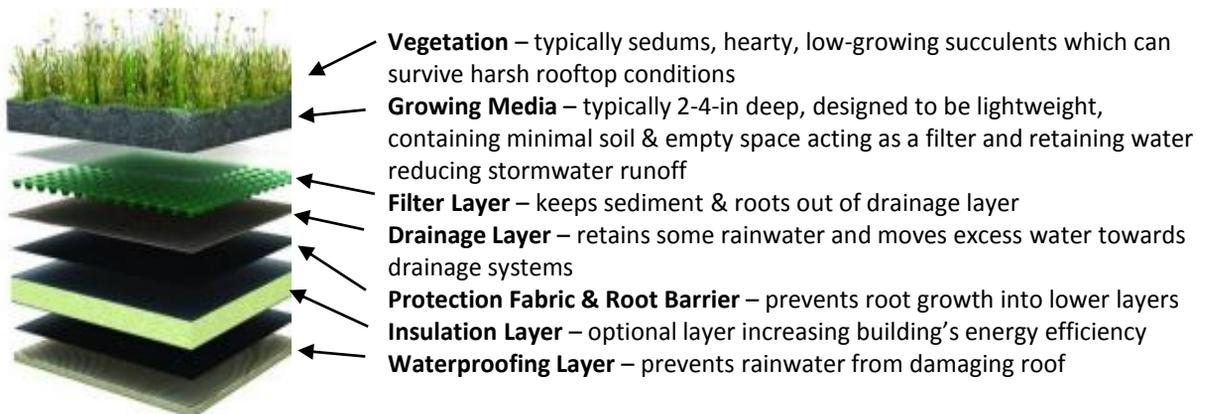
This fact sheet provides SWM practices information and maintenance requirements that are general in nature. Additional maintenance may be required based on the unique nature of your stormwater management practice.

Troubleshooting Issues

Symptom	Possible Cause	Solution
Dead or dying plants in the first year	Plants are still establishing themselves and are in need of water.	The first year is the green roof's establishment period. Provide temporary irrigation during the first growing season and/or replant drought-tolerant plants if needed.
Poor plant health	Your plants may be the wrong type for your shade and moisture conditions or they may be smothered by weeds.	Remove dead or diseased plants and plant new vegetation as needed. Also be sure to regularly remove weeds and other invasive plants.
Poor establishment of plants	Soil or plant media may not be nourishing to plants.	Test soil and if results suggest, apply a slow-release fertilizer; avoid herbicides or pre-emergent weed control.

INVASIVE PLANTS

"Invasive" describes a species that, when introduced into an ecosystem aggressively establishes itself at the expense of native plants or animals (*Maryland Department of Natural Resources*). Regularly inspect vegetation and remove invasive/nuisance plant species. For more information on invasive plants in Maryland, please go to the Maryland Department of Natural Resources website at: <http://dnr.maryland.gov/invasives/Pages/default.aspx>.



Green Roof diagram