Green roofs, or living roofs, are vegetated rooftop systems that reduce stormwater runoff by 50-60% and can triple the life expectancy of a roof. They can be installed on just about any rooftop, but require that the structure be able to withstand extra weight.

Green roofs are categorized into two types, extensive and intensive. Extensive systems are thinner, with a layer of growing media that is 6” or less. Intensive roofs have a thicker growing media layer and may include trees or rooftop meadows. Due to the weight associated with intensive rooftops, they are typically only installed in new construction projects.

Blue Water Baltimore wants to help you make a difference. This document provides a brief overview of green roofs and helps you complete the Project Approval Form for the Water Audit Program. Additional resources are available at www.bluewaterbaltimore.org/water-audit-resource.

Why Should I Install a Green Roof?

- Extend the life of your roof
- Improve the view from overlooking windows
- Minimize stormwater runoff

Green roofs are not for everyone. A rain garden or conservation landscaping may not sound as exciting, but these are much more affordable ways to reduce stormwater runoff.

When you register for the Water Audit Program, a Blue Water Baltimore staff member will conduct a site visit to assess your property. We will help you determine if a green roof is a good option for you.

Blue Water Baltimore provides financial incentives for green roofs on properties within the four watersheds we serve. You can register online at www.bluewaterbaltimore.org/audit-registration. See page 4 for additional details.

A green roof is a great way to reduce stormwater runoff and keep your neighborhood cool during the summer months.
Where Can I Install a Green Roof?

Green roofs can be installed on most rooftops. Installing a green roof on the main building of a property will maximize stormwater runoff reduction. However, you may want to think about smaller spaces such as porches, additions, garages, and sheds. A green roof can be a great way to improve the view, so identify potential locations that can be viewed from upper windows or from some other place on your property.

Older rooftops often require additional structural support to accommodate a green roof, increasing the cost. Likewise, green roofs on steeper rooftops require additional engineering and expertise to prevent erosion.

Getting Started

It is highly recommended that you work with a green roof contractor. Our list of recommended contractors includes companies that specialize in green roofs (see below). Any costs incurred throughout the process can be counted towards project total, and will influence the rebate available through the Water Audit Program. Your project must meet the qualifications listed on page 4 to qualify for a rebate.

Before you call a contractor, be sure this is a project you can afford. At a residence, expect to spend a minimum of $15 per square foot. The smaller the space, the larger the cost per square foot.

Once you have selected a contractor, the next step is to assess the structure. An extensive green roof weighs approximately 30 pounds per square foot when saturated. Therefore, it is important to determine if the rooftop can withstand this weight as it is or if it needs to be reinforced. If you have an older building, you may need to hire a structural engineer to be sure your structure is strong enough. Discuss this need with your green roof contractor.

Do I Need a Permit?

Baltimore City requires a permit, but Baltimore County does not.

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Blue Water Baltimore’s extensive green roof has a variety of sedum plants.

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Recommended Green Roof Contractors

This is not an exhaustive list. However, these companies have worked closely with Blue Water Baltimore and are known to work in the Baltimore region.

Furbish Company
www.furbishco.com
443-874-7465
Commercial Roofs Only

Ciminelli’s Landscape Services, Inc.
www.ciminellilandscape.com
410-741-9683

Highview Creations
www.hvccb.com
410-513-9560

Greenworks
www.dcgreenworks.org
202-518-6195

Blue Water Baltimore's extensive green roof has a variety of sedum plants.
Green Roof Components

The vegetation is what puts the “green” in green roofs. In an extensive green roof system, the plants are typically sedums, hearty, low growing, succulent plants that can withstand the harsh conditions on a rooftop.

The plants take root in a growing media, typically 2-4” deep in extensive green roof systems. The media is specifically designed to be light weight, contain little soil, and have a lot of empty space. It acts as a filter and retains water, making a green roof good at reducing stormwater runoff.

Below the medium is a filter layer which keeps sediment and roots out of the drainage layer. The drainage layer retains some rainwater but also conveys the excess water towards gutters or other drainage systems.

Below the drainage layer is a layer protection fabric a root barrier, which prevent the roots from penetrating lower layers. An insulation layer may be added to increase the building’s energy efficiency.

At the base is the waterproofing layer which prevents rainwater from damaging the roof deck. Often, the existing waterproofing layer on a rooftop is sufficient. A green roof contractor will be able to determine if a new waterproofing layer is required. Information about each of these layers is required when you complete the Project Approval Form.

There is often a 12” wide vegetation free zone around the perimeter of a green roof system. This area prevents roots from growing into the parapet (portion of wall that extends above the rooftop).

Maintenance

Green roofs require maintenance just like conventional roofs. Some green roof contractors offer maintenance contracts.

The first year is the establishment period, when the most inspection and maintenance is required. Check your roof several times during this first year. After year one, check your roof at least once a year.

Check on plant survival and complete plant coverage. Most plants selected for new green roofs are tried and true survivors in the harsh environment of a city rooftop. However, there may be some die-off. Check with your contractor about the best way to re-plant in bare areas.

Clean your gutters. Just like with a conventional rooftop, you’ll want to clean out your gutters or roof drains to ensure they are not clogged. If they are clogged the precipitation that is not retained by the green roof will overwhelm the system, adding weight and possibly damaging the rooftop or components of the green roof itself.

Check for leaks. If your roof was installed correctly, you shouldn’t have any leaks. When they occur, leaks are typically at the corners and edges. Leak detection systems are available but they are typically cost prohibitive at the residential scale.

Irrigate. You should only need to irrigate during the establishment period, if at all. However, you should have a plan for getting water up to your roof if needed.

Installing a Green Roof?

Be Sure to Submit Project Approval and Rebate Forms

Once you have your project plans, it’s time to submit a Project Approval Form available at www.bluewaterbaltimore.org/water-audit-resource/. If you have estimates or plans prepared by a contractor, they should be attached to the form. Blue Water Baltimore must receive a completed form at least 2 weeks before the project is installed to allow for project review and calculation of expected rebate.

After completing your project, submit a Rebate Form with a copy of all paid invoices and receipts. To obtain a rebate Blue Water Baltimore must receive a completed form at least 6 months after the project was approved.
Your property directly impacts our waterways. Blue Water Baltimore wants to help you make your home better!

Properties located within the Direct Harbor, Gwynns Falls, Jones Falls, and Herring Run watersheds are eligible for financial incentives and services via the Water Audit Program.

Register for a Water Audit!

Complete the online form at www.bluewaterbaltimore.org/audit-registration
410.254.1577 ext 106
WaterAudit@bluewaterbaltimore.org

Enhance Your Impact

This guide is one of seven provided by Blue Water Baltimore. Each features a method or technique which is commonly used to manage stormwater, also known as a best management practice (BMP).

You can further improve your property by adding additional BMPs:

- Direct a disconnected downspout to a vegetated area
- Install a rain barrel or cistern to irrigate during dry periods
- Plant a tree
- Remove hardscape and replace with conservation landscaping
- Install a rain garden to filter and absorb run-off

A combination of BMPs will increase your positive impact!

Financial Incentives

- Rebates up to $2 per square foot of green roof
- Incentive awarded will not exceed 50% of total project cost

Check www.bluewaterbaltimore.org for updated incentive rates, forms, & standards

Project Standards

- Project must be a retrofit
- Projects cannot be used to meet new or redevelopment stormwater requirements
- Minimum of 4” extensive green roof (or proven 1” storm retention capacity)
- Green roof meets ASTM or FFL guidelines
- Permit obtained from relevant permitting agency (if required by the locality)
- Formal Blue Water Baltimore approval