

What are Green Roofs?

A green roof is designed to hold soil and plants while still protecting the building. Rooftops occupy a lot of space in cities and urbanized areas. The type of roofing materials on top of a building can greatly affect its *sustainability* or its ability to be maintained over time while avoiding consumption of natural resources. Green roofs are more sustainable because they last longer than conventional rooftops. The health and quality of our environments are also impacted when sun and rain interact with these rooftops.

Traditional rooftops are made of hard, impermeable, dark materials which absorb sunlight and heat up surrounding areas. Increases in air temperature in an area with many unplanted surfaces is called the “Urban Heat Island Effect.” Impermeable surfaces do not allow water to permeate through, protecting the building below but leading to rapid stormwater runoff, contributing to water pollution and increasing the likelihood of flooding. Green roofs offer solutions to these problems and make buildings more sustainable.

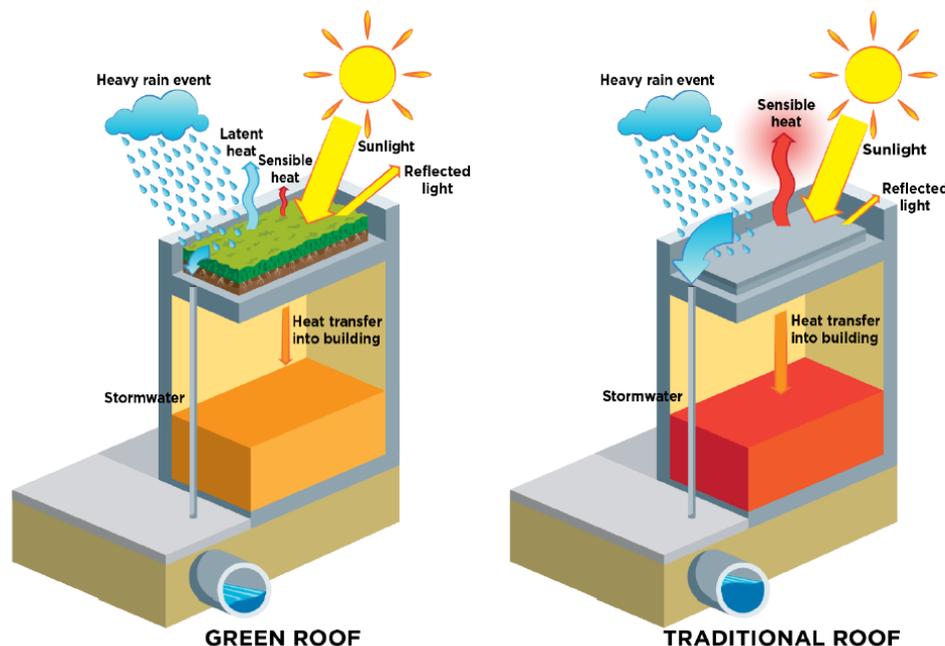
Green roofs are a type of green infrastructure, used to prevent, slow, or store stormwater runoff. While green roofs have a higher initial cost and require more maintenance, they result in long-term savings. Green roofs can be intensive or extensive depending on how much weight the roof is designed to support.

Intensive Green Roofs:

- Flat rooftops
- Heavier with deeper planting depths
- Greater variety of plants, herbs to trees

Extensive Green Roofs:

- Flat or sloped rooftops
- Lighter-weight with less growing media
- Drought-tolerant, shorter plants



A comparison of heat and rain effects for green and traditional rooftops. (Source: EPA 2018)

Benefits of Green Roofs

- Less rainwater entering sewers from the rooftops, lowering the chance of flooding.
- Reduced temperatures on the roof, in the building, and urban heat islands.
- Lower energy consumption due to cooling and insulating effects.
- Increased biodiversity and natural habitat for birds, insects and other living organisms.
- Less UV damage with lengthened lifespans of rooftops.
- Mitigation of climate change by removal of a greenhouse gas, CO₂, through photosynthesis.
- Improved aesthetics of buildings and cities.
- Enhanced air quality through collection of particulate matter by plants.
- Opportunities for urban agriculture on intensive rooftops.
- Improved acoustics on upper floors through insulation.
- Generation of jobs and economic development.

Green Roofs, Sustainability, and Ohio University

Ohio University's Commitment to Sustainability

- Ohio University defines sustainability as the capacity to simultaneously benefit **people**, the **planet**, and **prosperity** now and in the future.
- The Ohio University Sustainability and Climate Action Plan ensures fulfillment of institutional commitments to social, environmental and economic well-being.
- Visit the [Office of Sustainability](#) to learn more about its initiatives.



Ohio University Green Infrastructure

Green Infrastructure improves stormwater management and includes tree

plantings, green roofs, bioswales, raingardens, permeable pavement, and rain barrels.

- Green roofs are located on Schoonover Center, McCracken Hall, over the Edwards Accelerator, and behind Jefferson Hall covering a utility tunnel.
- Green infrastructure contributes to Leadership in Energy and Environmental Design (LEED) certifications, achieved by McCracken Hall (LEED Gold) and other campus buildings.
- Ohio University also has raingardens, rain barrels, and has been named a Tree Campus USA since 2016. Find a full list of all green infrastructure on campus: www.ohio.edu/sustainability/operations/water.

How can I learn more about green roofs?

- Visit websites for the organizations listed on the bottom of page 1 or <https://greenroofs.org/>
- Join *The Green Initiative*, an Ohio University student organization, or follow the group on Instagram: [@greeninitiativeou](#) and Twitter: [@ougreeteam](#)
- Visit our [website](#) for more information including flyers discussing:



- Economic Impacts
- Green Roof Technology
- Policy Implications
- Psychosocial Benefits
- Research on Green Roofs
- Schoonover Green Roof Project

For more information please visit:

www.ohio.edu/sustainability/schoonover-green-roof-project



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