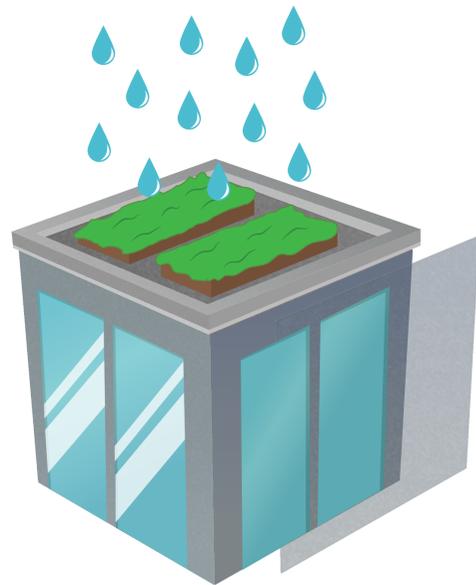


MSU SUSTAINABLE STORMWATER MANAGEMENT WALKING TOUR

Michigan State University (MSU) has implemented **green infrastructure** to capture stormwater from surrounding roads, parking lots, and buildings. Previously, water from these surfaces entered the storm sewer system, which led directly into the Red Cedar River. Now through a variety of green infrastructure practices, stormwater is captured and either reused or infiltrated on site. Capturing stormwater reduces pollutant runoff into the river, improving water quality.



WATER CAPTURE

During the growing season, green roofs have been found to retain 70%-90% of rainfall. The captured water prevents rainfall from becoming stormwater runoff.

DID YOU KNOW?

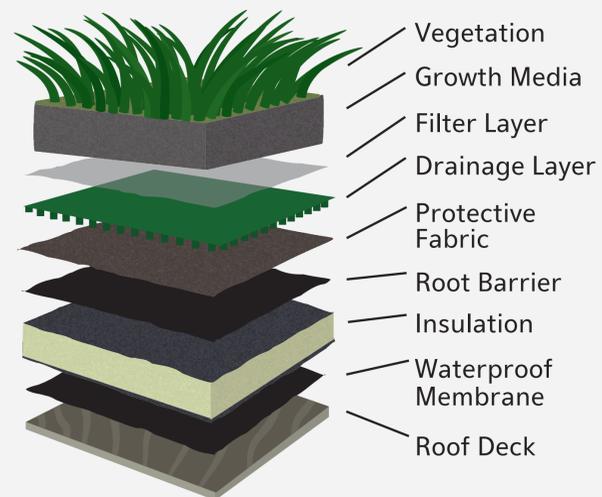
A green roof that is properly installed and maintained may have a functional lifespan of 30 to 50 years. There are some examples of roofs that are still waterproof even after 70 years! A green roof may have a 2-3 times greater lifespan than a traditional shingle and tar roof. This is mainly due to the waterproof layer being protected from sunlight. Also, the insulating properties of the roof layers protect it from thermal expansion and contraction due to swings in temperature.

While a Protected Membrane Roof (MSU Standard) possesses most of these qualities, stormwater absorption, evaporation, filtration and wildlife habitat can only be acquired through the use of a green roof system.

You are an essential part of the Red Cedar Watershed, and your actions can help to protect our shared water resources.

To learn how you can help, visit: msu-water.msu.edu

GREEN ROOF LAYERS



Like any building's roof, a green roof has layers. These layers provide protection from water as well as insulation which reduces energy use by keeping the building warmer in the winter and cooler in the summer.

WELLS HALL GREEN ROOF

WHAT IS A GREEN ROOF?

A green roof uses plants to provide environmental benefits. Plants absorb rain and filter pollutants that would otherwise enter rivers and lakes. Green roofs also reduce roof temperature, provide insulation to buildings, reduce energy costs, and prolong roof life when compared to common roofing systems. A combination of layers, such as growing media, rubber membrane, and insulation, creates a healthy environment for plants to grow while still preserving the integrity of the roof.



GREEN ROOF PLANTS

A combination of sedum plants are used on the top of the Wells Hall roof. Sedums adapt well to the extreme conditions of the roof environment. Many sedum species thrive in the high light and low water environment that green roofs offer.

MICHIGAN STATE UNIVERSITY | SUSTAINABILITY

Contributing Departments and Units
 Biosystems Engineering
 Community Sustainability
 Horticulture
 Infrastructure Planning and Facilities
 Institute of Water Research