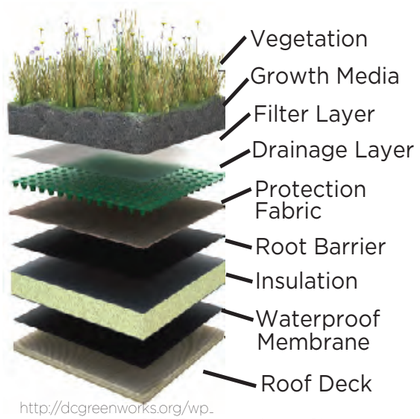
MSU SUSTAINABLE STORMWATER MANAGEMENT WALKING TOUR

WELLS HALL GREEN ROOF

Michigan State University has implemented Low Impact Development (LID) practices 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.

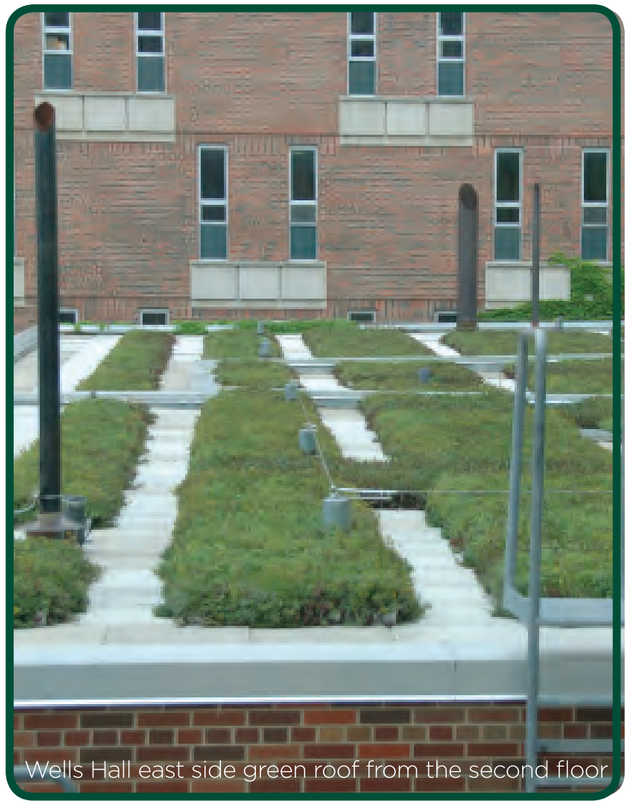
Now, through a variety of LIDs, stormwater is captured and either reused or infiltrated on site. Capturing stormwater reduces pollutant runoff into the river therefore improving water quality.



http://dcgreenworks.org/wp-content/uploads/2011/12/green-roof-layers2.jpg

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 east side green roof from the second floor

Water Capture

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

Green Roof Plants

A combination of sedum plants are used on the top of the Wells Hall roof. Sedum 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.

Green Roofs

A green roof uses plants to provide environmental benefits. Plants absorb rain and filter pollutants that would otherwise enter rivers and lakes. Green roofs provide benefits beyond stormwater relief. They 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 for grow while still preserving the integrity of the roof.

Did You Know?

A green roof that is properly installed and maintained may have a functional lifespan of 30-50 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.

Contributing Departments

Infrastructure Planning and Facilities
Institute of Water Research
Department of Horticulture

SUSTAINABILITY

For more information and other tours, visit: **bespartangreen.msu.edu** or **www.msu-water.msu.edu**