

WATER QUALITY IMPROVEMENTS IN THE ALLIANCE OF DOWNRIVER WATERSHEDS



BROWNSTOWN MIDDLE SCHOOL GREEN ROOF

BROWNSTOWN TOWNSHIP, MICHIGAN

Benefits of Green Roofs

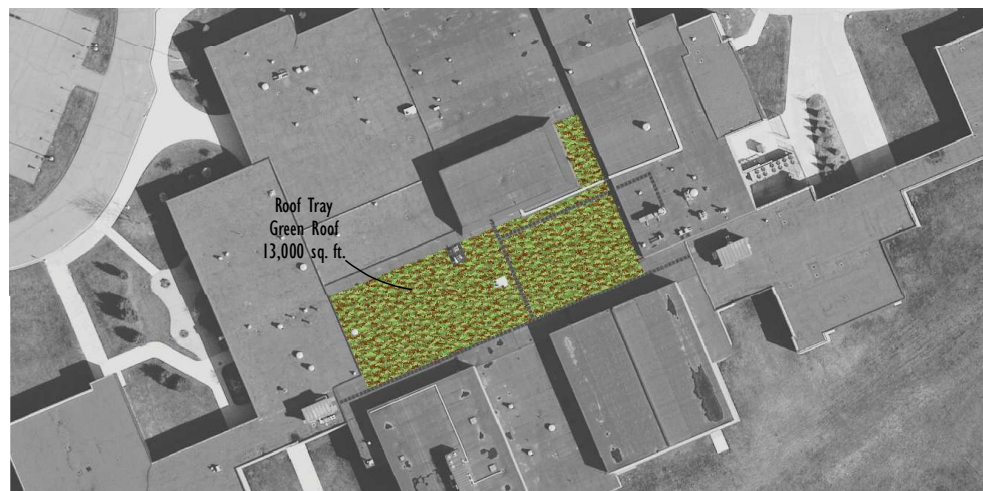
Green roofs provide numerous ecological and economic benefits including stormwater management, energy conservation, mitigation of the urban heat island effect, and increased longevity of roofing membranes, as well as provide a more aesthetically pleasing environment to work and live. A major benefit of green roofs is their ability to absorb stormwater and release it slowly over a period of several hours, retaining 60 to 100 percent of the stormwater they receive, depending on the duration and the intensity of the storm.

In addition, green roofs have a longer life-span than standard roofs because they are protected from ultraviolet radiation and the extreme fluctuations in temperature that cause roof membranes to deteriorate. A vegetated roof has a life expectancy of 60 years -- three times as long as a traditional roof.

As pervious surfaces are replaced with impervious surfaces due to urban development, the need to recover green space is becoming increasingly critical for the health of our environment. Vegetated roof covers have been used to create functional meadows and wetlands to mitigate the development of open space.

In late 2010, a large section of green roof was installed at Brownstown Middle School, part of the Woodhaven-Brownstown School District. In total, the live roof tray green roof section covers approximately 13,000 square feet of roof space. One of the key drivers for the green roof installation was the exceptional educational opportunity that the green roof will provide for students. In addition to the demonstration of the green roof technology, the green roof will also facilitate learning related to such topics as ecology, conservation, energy efficiency, and sustainable design.

Beyond the educational benefits, the green roof project was also seen as an opportunity for the school district to reduce stormwater runoff, increase the lifespan of the roof, and reduce facility heating and cooling costs at the school site.



GREEN ROOF SECTION LOCATION

Project at a Glance

Location

Brownstown Middle School
20135 Inkster Road
Romulus, MI 48174

Project Costs

\$321,000

Size

13,000 square feet



BEFORE INSTALLATION



AFTER INSTALLATION

Funding for the green roof was secured through a grant from the Michigan Department of Environmental Quality. Project partners included the Woodhaven-Brownstown School District, the Alliance of Downriver Watersheds (ADW), and Lawrence Tech University.

From the perspective of the ADW, the green roof project at Brownstown Middle School will provide foundational monitoring data to support the promotion of green roofs as a key green infrastructure tool for watershed management within Southeast Michigan. The data acquired through project monitoring will be used for community education purposes and to promote the installation of additional green roofs within the watershed.

This Nonpoint Source Pollution Control project has been funded in part through the Michigan Nonpoint Source Program by the United States Environmental Protection Agency under assistance agreement C9975474-09 to Wayne County Department of Public Services for the Water Quality Improvements in the Alliance of Downriver Watersheds project. The contents of this document do not necessarily reflect the views and policies of the EPA, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

What's a green roof?

A vegetative roof, or "green roof" is a conventional roof that is partially or completely covered with vegetation, allowing the roof to function more like a vegetated surface.



About the Alliance of Downriver Watersheds

The Alliance of Downriver Watersheds (ADW) is a governing body in southeast Michigan established to carry out stormwater policy and management across the Ecorse Creek, Combined Downriver and Lower Huron River watersheds. The members of the ADW include the Woodhaven-Brownstown School District and 24 units of government in the Downriver Area.



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