

WATER QUALITY IMPROVEMENTS IN THE ALLIANCE OF DOWNRIVER WATERSHEDS



ERVING ELEMENTARY SCHOOL GREEN ROOF WOODHAVEN, 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.

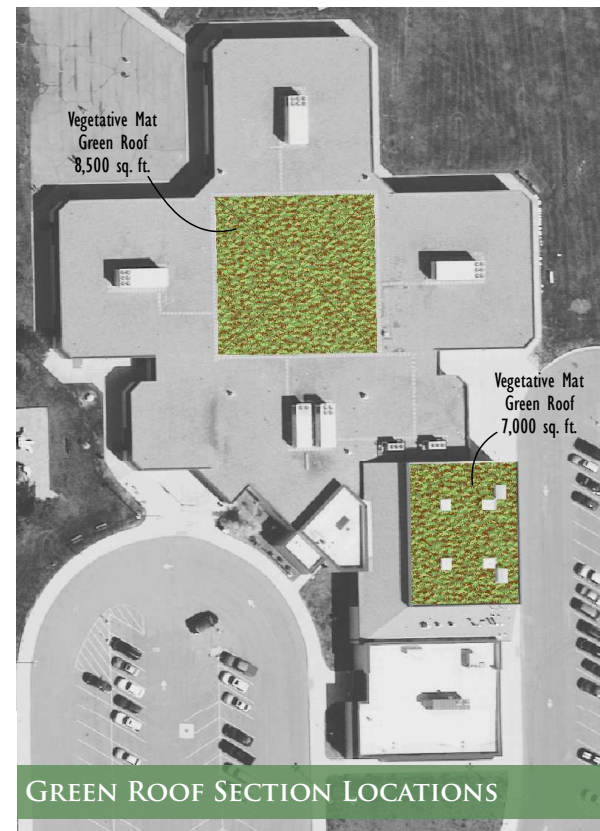
In addition, green roofs have a longer life-span than standard roofs because they are protected from ultraviolet radiation and the extreme fluctuations in temperature that cause roof membranes to deteriorate. A vegetated roof has a life expectancy of 60 years -- three times as long as a traditional roof.

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.

Source: Low Impact Development Manual for Michigan, SEMCOG, 2008.

In late 2010, two sections of green roof were installed at Erving Elementary School, part of the Woodhaven-Browstown School District. The vegetative mat green roof sections cover approximately 15,500 square feet of roof space, which represents approximately one quarter of the total roof surface. 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 LOCATIONS

Project at a Glance

Location

Erving Elementary School
24175 Hall Road
Woodhaven, MI 48183

Project Costs

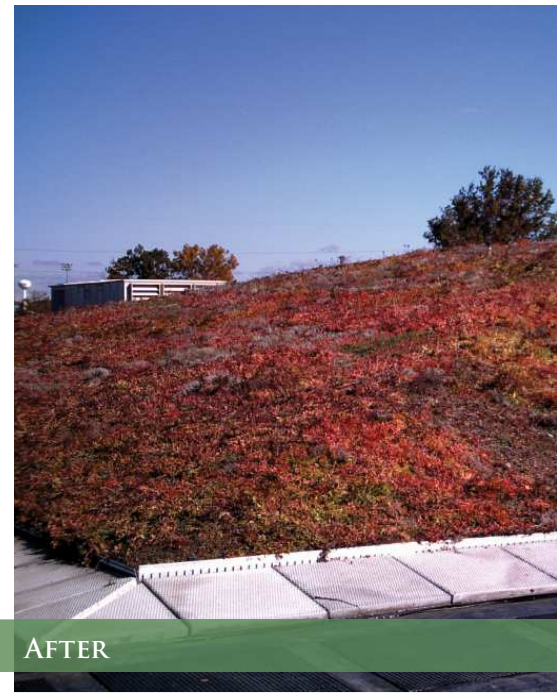
\$296,000

Size

8,500 square foot section &
7,000 square foot section



BEFORE



AFTER

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 Erving Elementary 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.

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.



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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.



www.allianceofdownriverwatersheds.com