

Your Guide to Low Impact Developments in Greater Grand Rapids

Grand Rapids Community College Parking

143 Bostwick Avenue, N.E., Grand Rapids



Grand Rapids Community College Parking Lot

Grand Rapids, Michigan
October 2004

LID Features

Porous asphalt paving

A net-zero storm water
discharge site

Rain gardens

Design, Construction

Driesenga & Associates

History

The project is located adjacent to the historical Heritage Hill Neighborhood District. Prior to construction of the parking lot, there was a parking congestion problem for the neighboring streets. This project provided the necessary facility to relieve the parking congestion and improve the appearance and quality of the neighborhood.

LID Features

This is a porous asphalt parking lot constructed on steep slopes with an 8-inch stone sub-base and deeper stone storage cells for temporarily storing and infiltrating storm water. This site has no storm water discharge into the public drainage system. Students planted rain gardens in three locations on campus.

Other Green Features

The site layout conforms to the nature contour features to preserve vegetation, producing an aesthetically pleasing appearance.



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Social and Economic Benefits

The College's facilities master plan intended that this parking lot would be only temporary for five to ten years. However, the plan was changed to include a permanent facility based on the superb performance and minimal maintenance required. The alternative to the porous pavement option would have been the construction of large underground storage tanks with a restricted discharge into the public storm sewer. That alternative was more expensive for the college, and would have added more storm water runoff to the public drainage system with the possibility of contributing to flooding in the City's downtown area. The combination of lower cost, better pavement and safety performance, zero storm water discharge, and residential neighborhood improvement makes this an excellent example of what LID can accomplish.



LID Lessons Learned

The site is very steep. Some parts of the parking lot have a 5% slope. Therefore, a critical feature of the asphalt mix design is shear strength. Research conducted by Arne Larson, P.E., of Driesenga Associates, discovered a "Drain Down" test specification for the Georgia Transportation Department. Working with the mix designer, Nate Voruganti at Grand Rapids Asphalt, they were able to create an asphalt mix with the necessary shear strength, that could be rolled with a heavy roller and maintains excellent porosity.

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