

# Your Guide to Low Impact Developments in Greater Grand Rapids

## Frederik Meijer Gardens

1000 East Beltline Avenue, N.E., Grand Rapids, Michigan



### History

In 1990, the West Michigan Horticultural Society began planning for this facility with the intent of providing the West Michigan area with a multiuse horticultural center. Protection of the site's wetlands was critical. The objective of the Gardens' storm water management system was protection of water quality in the site's pristine wetlands, marshes, and natural woodlands. The use of innovative storm water management practices, including pioneering work in the use of bioretention, was a critical component and fell in line with the Horticultural Society's vision.

### LID Features

A system of bioretention cells, or rain gardens, was designed to intercept parking lot runoff. A treatment-train approach was used that included a wet settling pond prior to the discharge of collected storm water into the wetlands.

### Frederik Meijer Gardens

Grand Rapids, Michigan  
1994

#### LID Features

Rain garden

Storm water wetland

#### Awards

Integrator Award -  
Consulting Specifying  
Engineering Magazine  
(1997)

Honorable Conceptor  
Award - American Council  
of Engineering  
Companies/MI and  
Michigan Society of  
Professional Engineers  
(MSPE) (1996)

Quality of Life Award -  
American Society of Civil  
Engineers/Western  
Branch, Michigan Section  
(1995)

Architectural/Building  
Construction Award -  
American Galvanizers  
Association (1995)

Most Distinguished Project  
Award - American  
Galvanizers Association  
(1995)

Outstanding Achievement  
in Private Practice,  
Environmental Division -  
MSPE (1994)

#### Design, Construction

Engineer: FTC&H

Architect: Cox Medendorp  
Olson Architects

#### Landscaping

David Nederveldt, LA

[www.meijergardens.org](http://www.meijergardens.org)

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### Social and Economic Benefits

The resulting storm water management system is an ideal public education tool and a showcase for nonpoint source pollution control technologies.



### LID Lessons Learned

- ◆ Make sure contractor has adequate direction and understands intent of LID systems, which may be completely opposite of construction methods they are used to performing. Parking lot grading was not completed to spread out sheet flow to make best use of all of the bioretention areas. Contractor graded entire lot to only one bioretention swale.
- ◆ Mulch placed in bioretention cells floated during large rain events, settling around catch basin casting and plugging openings in the casting. This precluded excess water from draining quickly and resulted in use of the emergency overland flow route across the parking lot drive.
- ◆ Cobblestones are not necessary as a top course. They heat up in the summer sun and increase the temperature of storm water coming in contact with the rocks.

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