



Orchard Park Bioretention & Cole Creek Restoration

Orchard Park, Omaha, NE

City of Omaha Stormwater Program

SITE AND PROJECT SUMMARY

The Orchard Park and Cole Creek Restoration project was Omaha Stormwater Program's first demonstration project illustrating how green infrastructure can be used to manage stormwater runoff. A number of partners were involved with the project, including the City of Omaha Parks Department, Roncalli High School, Douglas County, Benson-Ames Alliance, and Omaha by Design. The project consists of a half-mile stream restoration and five bioretention systems located throughout the park.

A bioretention system differs from a rain garden in that it features an underdrain with a valve to control outlet flow volume, allowing it to drain within 24 hours; this wasn't always the case. The original design for the northernmost bioretention system did not include a control outlet valve on the underdrain, and after two

seasons it was apparent that it was draining rapidly, usually within an hour after a rain event. A valve was installed to regulate the flow and has become a standard piece of equipment in bioretention systems today. The valve gives the site flexibility and adaptability for increased infiltration overtime as the plants mature and establish deeper roots. Valves also allow for the adjustment to site conditions, testing of infiltration across the system, and the ability to dry the system out quickly for repairs, if necessary.

The overall project for the park also included walking trails across Cole Creek to the east side of the park where there are basketball courts and open space. After the park's completion, residents in the area have noted that the park is used more and local street and home flooding has been reduced significantly.

NORTH BIORETENTION



MONITORING - NEUTRON PROBE READING



PROJECT DETAILS

Bioretention Systems Footprint (5)	14,000 ft ²
Stream Restoration Length	0.5 mile
Installation Date	2009
Predominant Land Use	Residential
Predominant Soil Types	Silty clay

MONITORING	METHOD
Rainfall	Decagon rain gauge
Water Quality	Periodic simulation events
Soil Moisture	Neutron probe; Decagon soil moisture sensors
Ponding Depth & Drawdown Rate	Global Water pressure transducer

DESIGNED BY	CONSTRUCTED BY	MONITORING/ASSESSMENT BY	MAINTENANCE BY
Big Muddy Workshop, Olsson & Associates, LRA	Tab Construction, Dostals Construction	Omaha Stormwater Program	Omaha Stormwater Program

SITE LOCATION – N 66th St & Kansas Ave



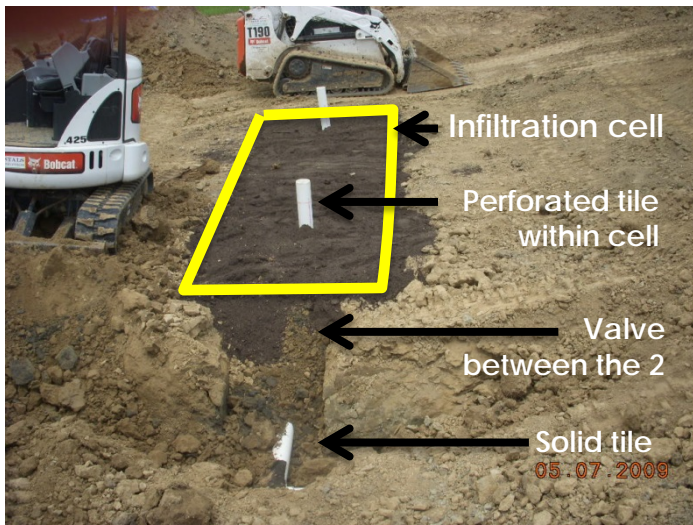
RETROFITTED CURBSTOP VALVE



PHOTOS



PROJECT LAYOUT AND SIGNAGE



The Curve of Cole Creek

