



Metropolitan Community College Green Infrastructure Classroom

5300 North 30th Street, Omaha, NE

City of Omaha Stormwater Program & Metropolitan Community College

SITE AND PROJECT SUMMARY

In Spring of 2012, two bioretention gardens were installed at the Metropolitan Community College (MCC) Fort Omaha campus. Previously a turf lawn, the area was converted into two bioretention basins to capture parking lot runoff and allow it to infiltrate into the ground. The two bioretention gardens are an excellent green infrastructure resource for the MCC horticulture program, as it allows for performance assessment of the various plants and pretreatment systems used.

The MCC Green Infrastructure Classroom is unique because it was designed to utilize five different types of pretreatment options. All five of the pretreatment features are intended to be affordable, off-the-shelf strategies. The five pretreatments include a utility box with a permeable bottom, a vegetated sedge swale, a Scour Stop erosion mat, a modular concrete block wall sump, and a vegetated bag sump. A curb cut directs water into the bioretention garden, past a Scour Stop erosion mat. The mat has holes in it to allow vegetation to grow up and through for reinforcement. The vegetated bag sump is the

“greenest” of the pretreatment solutions. Using lily turf to fill in and capture sediment and tolerate periodic removal to clean the sump. A sump created from a utility valve box slows the flow of water and has a perforated pipe under it that is tied into the underdrain. A sedge swale simply uses a variety of sedges to slow down and filter the stormwater being directed to it. The modular pretreatment basin features a contemporary retaining wall and has a perforated pipe under it, connecting it to the underdrain. All five pretreatments collect and treat water that drains off of the adjacent parking lot before conveying it to the bioretention gardens.

An additional feature of the MCC Green Infrastructure Classroom is the use of a green roof on top of a pergola and adjacent rain barrels. The green roof contains a variety of native grass species including Prairie Dropseed, Blue Grama, Side Oats Grama, and Sheep’s Fescue. Excess stormwater that is not absorbed by the plants or soil on the green roof then drains down two, 2” link galvanized chains that drip into the rain barrels underneath the pergola.



	BIORETENTION SYSTEM
System Footprint	2,180 ft ²
Underdrain	4" perforated PVC
Pre-Treatment System	Modular block, Scour Stop Mat, vegetated bag, utility box, vegetated swale
Outlet Control	4" Valve
Contributing Area	0.25 acre
Predominant Land Use	Parking Lot
Percent Impervious (%)	100%
Predominant Soil Types	Native: Clay to Loamy Clay

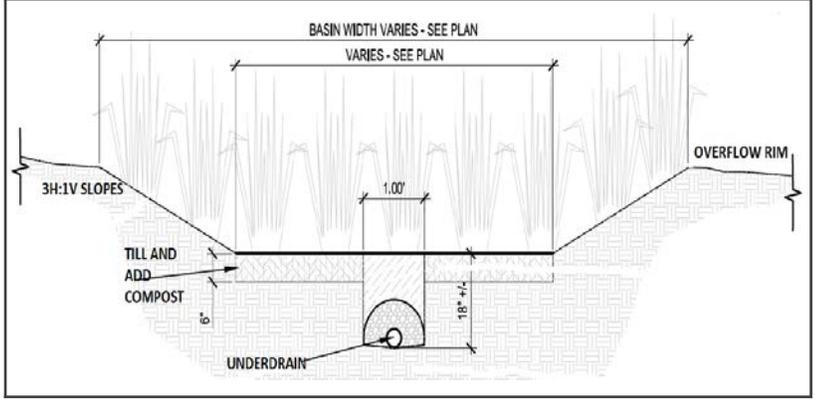
COSTS	
Design	\$9,012.00
Construction	\$22,545.00
Education Signage	\$2,565.00
Plants	\$1,880.00
Total	\$36,002.00

DESIGNED BY	CONSTRUCTED BY	MAINTENANCE BY
Vireo	Greenlife Gardens	Metro Community College

PRETREATMENT STRATEGIES



BIORETENTION CROSS-SECTION



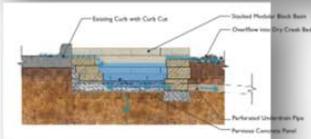
PHOTOS



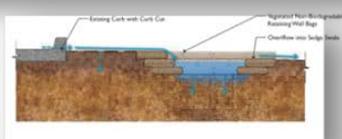
PROJECT LAYOUT



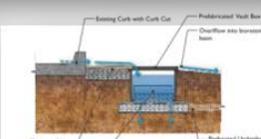
- 1 Existing parking lot
- 2 Prefabricated Pretreatment Basin. Collects and treats water draining off of adjacent parking lot.
- 3 Bioretention basin with native vegetation. Basin temporarily stores water in storm events and allows water to percolate into ground.
- 4 Sedge swale collects runoff from adjacent street and conveys water to bioretention basin. Sedges are ideal for filtering water.
- 5 Vegetated Bag Pretreatment Basin. Collects and treats water draining off of adjacent parking lot.
- 6 Garden overlook
- 7 Modular Paver Pretreatment Basin. Collects and treats water draining off of adjacent parking lot.
- 8 Dry creek bed filters and conveys water to bioretention basin
- 9 Erosion mat conveys water into native grass swale
- 10 Specimen shrub garden with aggregate path
- 11 Future shelter with green roof by the college
- 12 Existing lawn



Modular Paver Pretreatment Basin



Vegetated Bag Pretreatment Basin



Prefabricated Box Pretreatment Basin

Metro Community College
BIORETENTION GARDEN

Omaha, Nebraska