Case Studies
Sharing Details for Better Design

Orchard Park: The Site

Progression from the beginning, starting on 5-4-09

The Bioretention Gardens @ ORCHARD PARK

Stream Restoration

Infiltration Study Area Bioretention Gardens
Progression from the beginning, starting on 5-4-09

- Limit equipment in garden; now extremely compacted
- Infiltration cell
- Perforated tile within cell
- Valve between the 2
- Clean-outs & access risers
- Solid tile

5-7-09

5-12-09

5-13-09
2012 Nebraska Bioretention Garden Design Workshop

Created by: Steve Rodie, Ted Hartsig, & Andy Szatko
Close valves & flood

5-24-11

0 min

5 min

15 min
Take Home Points:

- 50/50 fine sand & compost drain excessively fast: 11”-14” /hr
- Not necessary to have large areas of amended soils (infiltration cell + soil conditioning design desirable)
- Install a valve on underdrain to regulate flow out
- Planting plan needs to reflect location in garden
- Indications that water quality is best if drawn down over 24 hours & at a slow rate
**Installation Background**

- Entire excavation to 2'
- Underdrain encircling garden
- Ball valve
- Drops into solid line connecting to storm sewer

**Summary of Performance History:**

- NW Gardens adjacent to railroad, constant flow of sediment
- Feast or famine: originally grouped into 3-4 garden groups to create treatment train, w/last in series hardly receiving water
- ‘Random’ plantings & encroaching weeds – more difficult to maintain
- Valves are typically shut entire year due to rapid infiltration
Getting infiltration rates for outside & inside gardens & through sediment

Don’t let weeding get away from you
Consecutive rains \(\geq 24\)-hr drawdown = some plants fail

Modifying projects after installation is ok…

…it helps to address in-field conditions…
...& maximize benefits.

MCC
- Waterwise Grant: NSA program, funded through NET
- Establish strong resource for horticulture department & curriculum centered on water & stormwater
- Bidding in April (City)

- Updated bioretention design
- 5 types of pretreatments
- Sedge-swales
- Shrub garden
- Prairie plantings
- Green roof with rain chains & barrel
- Porous concrete slab walkway

Coming Opportunities:
Metro Community College Waterwise Landscape
Coming Opportunities:
UNO Waterwise Bioretention & Landscape
Coming Opportunities: Florence Streetscape

Florence Streetscape

- Contribution from Waterwise Grant: NSA program, funded through NET
- Neighborhood revitalization project
- Bid this spring, install fall
- ‘Updated’ bioretention design
- Urban, street-side bioretention
- Engineered soil tree planters?
- Innovative pretreatment
  - ‘Sediment well’

Thank you very much for coming today
Questions or comments?

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