

UNO Bioretention Demonstration

A Waterwise Grant Project



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Project Context

- Post-construction ordinance
- 'Simple & natural'
- CSO & MS4
- Collaboration with community
- Create examples to learn from





Project Background

- Initial discussions with City and NFS - August 2011
- Logical location
 - Highly Visible
 - Campus
 - Fix was needed
- Proposal developed
- "You want to do what?"




Project Background/Funding

- Proposal completed - December 2011
- Commitments negotiated - "you want us to do what?"
 - Landscape Services
 - Facilities
 - Business/Finance
 - Contracts
- NFS funding lead: City covers remainder and is "Client"; UNO is property owner
- Support letter written for Vice-Chancellor to sign
- City project on campus property?

Funding


Grantor's Perspective

- Partnerships enhance the quality and scale of a project
- Waterwise Initiative
 - Funded by Nebraska Environmental Trust, administered by Nebraska Statewide Arboretum
 - Focus is on using plants to improve water quality, water conservation and habitat.





The Collaborative Model

- Instigator - Unstable faculty member
- Facilitator (Client) - City
- Willing (?) property owner - UNO
- Funders - NSA & City
- Designer - Big Muddy Workshop
- Qualified contractor - Dostals - Sup. Jim




Bioretention Design

- Two drainage areas
 - RED = 10,000 SF
10,000 SF
 - 45% impervious
 - BLUE = 14,000 SF
 - 30% impervious
- Ideal "side by side" comparison opportunity



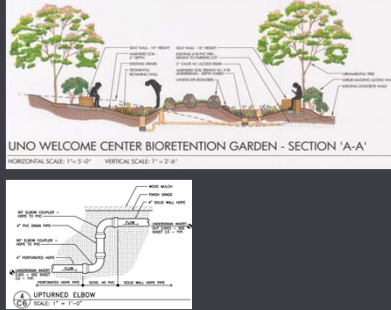
Bioretention Design

- Two cell design – Ying & Yang
- **Ying**
 - Amended soil trench – 1' min.
 - Direct drain
- **Yang**
 - Amended soil trench – 2' min.
 - Up-turned elbow drain – 'N'




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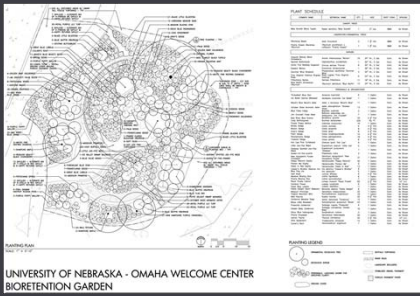
Planting Design

- Ideal opportunity to "practice what you preach"
- Test plants under variable conditions
- Create "ideal" planting design
- Maintainability critical



Planting Design (cont.)

- Open-ended plant variety opportunity
- "New" plants
 - 6 sedge species
 - Trees and shrubs
 - Not just within the bioretention cell
 - Emphasize garden context



Design Concept

- Design invited people into garden
 - Access to garden
 - Paths thru garden
 - Seating
- Visual Drama
 - Engaging
 - "What's that?"



Client Perspectives



- Vary bioretention details in retrofit
- Interactive layout
- Teaching tool
- Show potential benefits with integrating green infrastructure
- Better understand the plants used

Benefits

- Implementation experience for all disciplines
- Opportunity to expand bioretention design knowledge base
- Stack the odds in favor of success
- Having fun at work



Benefits (cont.)

- Enhance campus front door
- Stormwater Education
 - Design professionals
 - Contractors
 - Stakeholders
 - Students
 - Faculty and staff
 - Citizens



Lessons Learned

- Do more with less – minimized amended soil volumes
- It takes a team to make a great project
- Trust judgment to go outside the box
- Make inviting spaces – make it a place
- Variety is the spice of life
 - Drainage control options
 - Plants
 - Hardscape

