



Green Infrastructure & Stormwater Management CASE STUDY

High Point HOPE VI Redevelopment

Location: Seattle, WA

Client: Seattle Housing Authority

Design Firm(s): SvR Design Company

Landscape architect/Project contact: Peg Staeheli, ASLA

Email: pegs@svrdesign.com

ASLA Chapter: Washington

Project Specifications

Project Description: The High Point Neighborhood is Seattle's first green community, and represents a model for future urban and neighborhood redevelopments. Started in 2000, the project is among the first in the United States to integrate new urbanism, eco-friendly homes, and new technologies in drainage design. The project replaces a 716-unit low-income housing project built in 1942 with approximately 1,600 new dwelling units in a wide variety of building types. The units consist of low income, senior, and market-rate housing. Along with the housing, new parks, library, community center and a health center were developed for the project. The natural drainage system includes: amended soils, rain gardens, grassy and vegetated bioretention swales, conveyance swales, two miles of pervious sidewalks, and the first public porous pavement street in Washington State - 32nd Ave SW. This system built in a dense urban neighborhood provides flow mitigation by reverting the site's runoff rate similar to pasture conditions. In addition, to providing water quality treatment for pollution generating surfaces.



Project Type:

Other (please specify)

Part of a redevelopment project

Design features: Bioretention facility, rain garden, bioswale, downspout removal, porous pavers, curb cuts, pervious concrete streets, sidewalks, parking and basketball court; gravel pavement to porous paving, amended soils, preservation of existing trees, dispersion, pop-up emitters, and roof downspout splashblocks.

This project was designed to meet the following specific requirements or mandates:

State statute, local ordinance, to meet funding criteria, developer/client preference. In addition, there are more restrictive drainage requirements than the current code in 2000.

Impervious area managed: greater than 5 acres

Amount of existing green space/open space conserved or preserved for managing stormwater on site: greater than 5 acres. The existing 12 acres in environmentally critical areas was preserved. In addition, a portion of the existing trees within the site were preserved for the redevelopment.



The regulatory environment and regulator was supportive of the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements?
Yes, all were a factor.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: >\$5,000,000 (Public funding: Federal, state, regional, local)

Was a green vs. grey cost analysis performed? Yes. The delta difference in construction costs was estimated at \$2.7 million. An actual comparison of costs was not conducted to account for design, construction, maintenance, and property costs.

Cost impact of conserving green/open space to the overall costs of the site design/development project: We preserved trees and there was a cost associated with preserving the trees during design and construction. However the project was able to achieve the design unit count.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Slightly increased.

Number of jobs created: Unknown at this time. Hundreds created during construction.

Job hours devoted to project:

Planning and Design: 1,560,000

Construction: 2,100

Annual Maintenance: 3,500
 Other: 1,000

Performance Measures

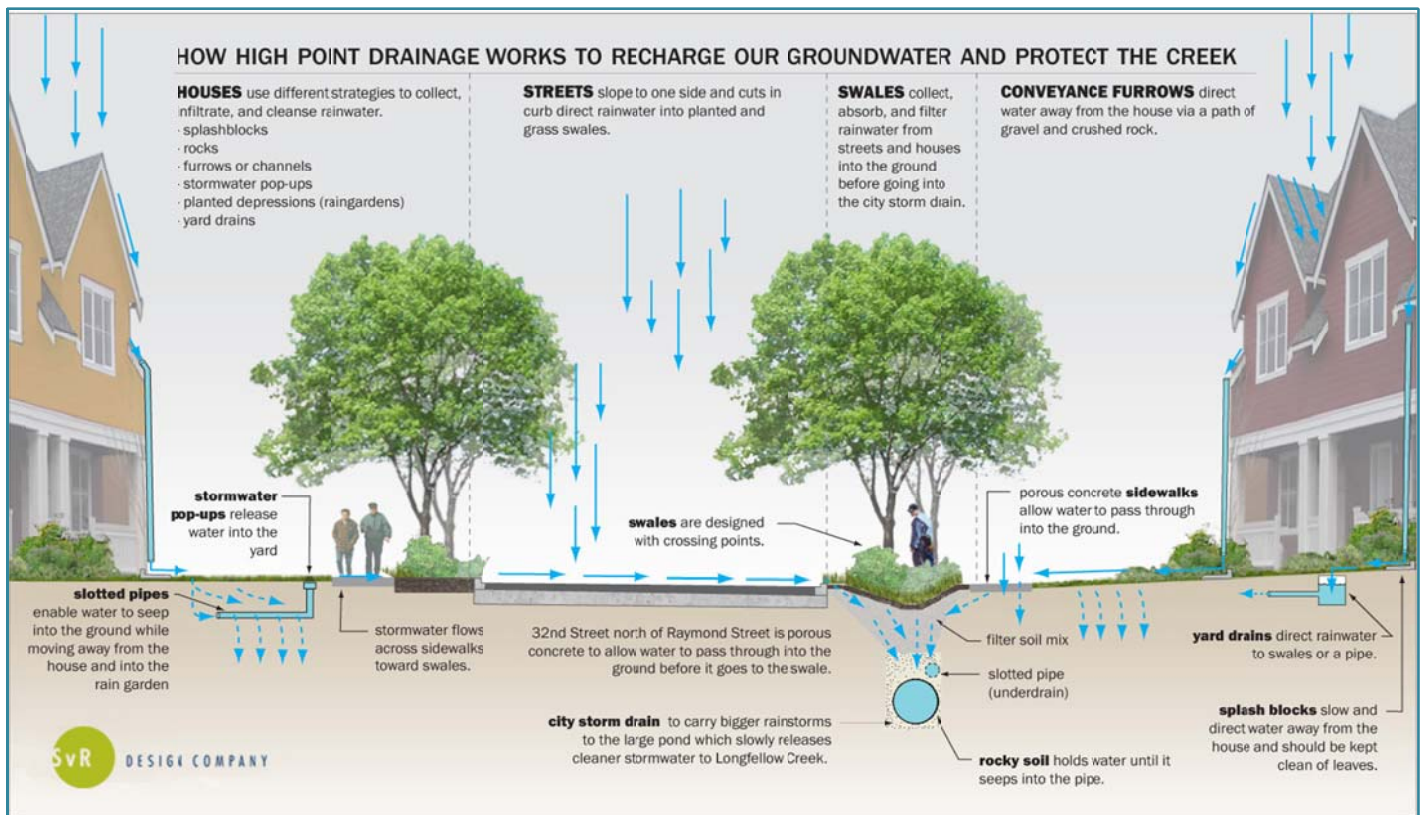
Stormwater reduction performance analysis:

Multiple natural drainage strategies allow the dense urban housing site to have peak flow rate and duration that mimic up to a 2-year storm event in pasture conditions. In addition provide flood control for up to 100-year storm event in accordance with City of Seattle flow control requirements for creek basin.

Community & economic benefits that have resulted from the project: Property value has performed better than market in the recent decline. The community is engaged in the site aspect.

Project Recognition

Merit Award, Washington Chapter (2003); ASCE Outstanding Project for Region 8 (2007); Vision 2020 Puget Sound Region (2003); Rudy Bruner Award for Urban Excellence - Silver, ULI Global Awards for Excellence (2007)



Additional Information

Links to images:

- <http://www.sustainablesites.org/cases/show.php?id=11>
- http://svrdesign.com/docs/High-Point-Technical-Drainage-Standards_LID_GSI_green-stormwater-infrastructure_web.pdf
- http://svrdesign.com/docs/High-Point-ROW-Maint-Guidelines_rev-06-2010.pdf
- http://svrdesign.com/docs/High-Point-ROW-Maint-Guidelines_Section-13-Maps.pdf
- <http://svrdesign.com/images/HowHighPointWorks.jpg>

High Point was an early adopter of large scale LID practices through extensive outreach locally and nationally. The project served to educate designers, elected officials, developers contractors, and the public to alternative approaches to development.