



Green Infrastructure & Stormwater Management CASE STUDY

Taylor 28

Location: 100 Taylor Ave N Seattle, WA

Client: BRE Properties, Inc.

Design Firm(s): Mithun

Landscape architect/Project contact: Deb Guenther, ASLA

Email: mithun@mithun.com

ASLA Chapter: Washington



Project Specifications

Project Description: Taylor 28 reconnects an unclaimed community to the city of Seattle through vibrant pedestrian open spaces. The first residential, mixed-use development in a greyfield, transforming neighborhood, the project reclaims 20 feet of underutilized roadway to enhance public space and the quality of urban experience. By restoring more than 30% of a site that was devoid of trees and consisted almost entirely of impervious surfaces, this project supports a broader strategy to create livable, walkable and ecologically balanced communities that concentrate growth within urban centers.

Project Type:

Mixed use

Part of a new development

Design features: Bioretention facility, rain garden, cistern, porous pavers, curb cuts, and two areas of permeable concrete pavement (1,000 sq/ft total) located along the curb edge to capture rainwater that could not flow directly into the rain gardens. This water is piped back to the rain gardens for infiltration.

All rain falling on the building roof enters the hybrid cistern/detention tank, which meets the City's detention requirement for a 25-year storm. Stored water is used for non-residential toilet flushing and landscape irrigation in summer.

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

Developer/client preference, LEED Silver Certification

Impervious area managed: 1 acre to 5 acres

Amount of existing green space/open space conserved or preserved for managing stormwater on site: 5,000 sq/ft to 1 acre. Over 7,500 sq/ft of asphalt was replaced by landscape areas and high albedo paving, reducing the urban heat island effect. Forty new trees further shade and cool the area. All runoff from the pedestrian zone is directed to one of 8 rain gardens, which vary in size from 100 sq/ft to about 800 sq/ft. The profile of each includes an infiltration gallery, which in some cases extends beyond the perimeter of the planting area above.

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.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: <\$5,000,000 (Public funding: Not available)

Related Information: Budget = \$38 million (building and site)

Was a green vs. grey cost analysis performed? No.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? By using a hybrid tank to meet the City's detention requirement, the client was able to leverage the additional cost of incorporating rainwater reuse. It was determined that the added costs (for

flow sensors, filters, piping and doubled supply pipe to the non-residential toilets) would be offset by the long-term water savings.

Number of jobs created: Not available

Job hours devoted to project: Not available

Planning and Design: Not available

Construction: Not available

Annual Maintenance: Not available

Performance Measures

Stormwater reduction performance analysis:

Infiltrates all runoff generated on both the site and the public-realm pedestrian space, resulting in zero discharge to the combined sewer system for up to a 25-year storm event.

Community & economic benefits that have resulted from the project: Transformed 20 feet of excess street width into a 38-ft wide, 15,000 sq/ft pedestrian plaza, setting the design standard for all of Taylor Avenue. Infiltrates all runoff generated on both the site and the public-realm pedestrian space, resulting in zero discharge to the combined sewer system for up to a 25-year storm event. Eliminates potable water use for landscape irrigation (on site and right-of-way) and uses harvested rainwater in non-residential toilets, saving up to 122,000 gals annually. Sequesters 1,648 lbs of carbon annually in 40 new trees on a site previously devoid of trees. As the trees grow, carbon sequestration will increase. A “smart” irrigation system uses water stored in the cistern to irrigate all landscape areas, both onsite and in the public right-of-way. High-performance LED pedestrian lighting was installed within the streetscape. The design took existing exterior street lighting into account to prevent excess lighting of the space and further reduce energy use.

Project Recognition

WASLA Merit Award for Design, 2010. WASLA Merit Award for work in Progress, 2005

Additional Information

Links to images: Landscape Architecture Foundation: Taylor 28 Case Study

<http://lafoundation.org/research/landscape-performance-series/case-studies/case-study/145/>

Mithun Website: http://mithun.com/projects/project_detail/taylor_28/

The project site was in an underdeveloped urban neighborhood with no clear identity and a lack of open space. The existing low-volume street was a 56 ft roadway with back-in angled parking

along both sides. There was concern that increasing development in this part of the city would exacerbate problems with the combined sewer system.

Taylor 28 established the precedent for urban design in the area with the streetscape serving as a neighborhood identifier . Excess street width was converted into pedestrian oriented open space. Designers used a combination of right-of-way rain gardens and a roof rainwater harvesting system to prevent stormwater from enter the city's overburdened combined sewer system.