



Green Infrastructure & Stormwater Management CASE STUDY

Underwood Family Sonoran Landscape Laboratory

Location: College of Architecture and Landscape Architecture / University of Arizona / Tucson, AZ

Client: University of Arizona

Design Firm(s): Ten Eyck Landscape Architects, Inc.

Landscape architect/Project contact: Christine E. Ten Eyck, FASLA and Todd Briggs, ASLA

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ASLA Chapter: Arizona

Project Specifications

Project Description: The Sonoran Landscape Laboratory was designed as a low cost, research-oriented, educational public space focusing on water-conscious design solutions and creating urban wildlife habitat and biomass. The project demonstrates both active and passive water harvesting techniques that dramatically reduces water consumption and exemplifies slowing storm water run off to reduce urban flooding. These principles allowed for the creation of a vibrant habitat and entry plaza, shaded by native trees while attracting numerous native species of bird and reptiles.

Project Type:

Institutional/education

A retrofit of an existing property

Design features: Rain garden, bioswale, cistern, porous pavers, and micro-basins.

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

Developer/client preference

Impervious area managed: 5,000 sq/ft to 1 acre

Amount of existing green space/open space conserved or preserved for managing stormwater on site: 5,000 sq/ft to 1 acre

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? The University requested the site design to be an interpretive learning experience using a range of materials that would be a fun, regional oasis and attraction for existing and future students and professors of the CALA program.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: >\$5,000,000 (Public funding: State - Arizona Board of Regents)

Related Information: The project was not allocated a budget for exterior improvements by the University. Due to these unprecedented budget challenges, the landscape architect and program director for landscape architecture at the UofA (Ron Stoltz) petitioned local resources for donations including plant material, inerts, irrigation and labor. Funded portions of the project that contributed to the storm water collection included the infrastructure necessary to collect storm water, HVAC condensate and grey water. This included the water storage tank, located within the building itself.

Was a green vs. grey cost analysis performed? No

Cost impact of conserving green/open space to the overall costs of the site

design/development project: As explained in item #4 of this form, the site development was severely challenged with no budget being allocated by the University. The commitment to green open space did however likely encourage greater involvement from the design and construction community that made this project possible.

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

Slightly increased. The investment on infrastructure within the building to enable the harvesting of storm water, HVAC condensate and grey water increased the budget of the building costs in relation to typical building design/construction.

Number of jobs created: Not known

Job hours devoted to project:

Planning and Design: 587 hours (hours by landscape architect)

Construction: Not available. Landscape labor was donated

Annual Maintenance: not known. CALA plays active role with student involvement

Performance Measures

Stormwater reduction performance analysis:

Design data shows all stormwater being retained and/or utilized on site.

Community & economic benefits that have resulted from the project: The project site has become a regional model for storm water management, water harvesting and the creation of urban habitat. The University commonly provides tours to numerous groups interested in this ground breaking and innovative project, educating others as to the benefits of sustainable practices in arid environments.

Project Recognition

ASLA Honor Award, General Design, 2010; Arizona ASLA Presidents Award, 2009

Additional Information

Links to images: <http://www.asla.org/2010awards/316.html>