Green Infrastructure & Stormwater Management CASE STUDY

Lindner Project (C. J. Austin & Co. Store)

Location: Missoula, MT
Client: Rob Lindner
Design Firm(s): Kent Watson & Associates, Landscape Architecture
Landscape architect/Project contact: Kent Watson, FASLA
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ASLA Chapter: Idaho-Montana

Project Specifications

Project Description: The project involved a historic neighborhood corner grocery store, which over time had been converted into six small residential apartments. The building had become run-down and was in need of work to upgrade the utilities, roof, siding, windows and landscaping. The client wanted the project to be as "green" as possible. This project provided the necessary upgrades, with a main feature being a courtyard of pavers around a huge maple tree edged with seat-high planters for residents to congregate. All of the roof runoff goes to on-site cisterns that provide water for irrigating the plant materials, which were selected for their water conservative characteristics.

Project Type:
Multifamily residential
A retrofit of an existing property

Design features: Cistern and porous pavers.

This project was designed to meet the following specific requirements or mandates:
Local ordinance, developer/client preference

Impervious area managed: less than 5,000 sq/ft

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

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? Client insisted that the project contain as many "green" elements as possible, while still providing an attractive project for this older neighborhood. For example, PV panels for electricity production were also installed.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: $50,000-$100,000 (Public funding: None)

Related Information: Includes underground cisterns, plumbing, pumps, and pavers for the courtyards and off-street parking.

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: It may have added a small increment to the costs, especially for the cisterns and pumps.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Did not influence costs. Since no analysis was done on the infrastructure cost for traditional stormwater design, we can not know what the cost difference might have been.

Number of jobs created: uncertain beyond those needed anyway for the project

Job hours devoted to project:

Planning and Design: 80
Construction: 72 (est.)
Annual Maintenance: Not available

Performance Measures

Stormwater reduction performance analysis:

Since all of the runoff of the 5,000 sq/ft of roof area is captured by the cisterns, all of the stormwater is retained on-site, until the cisterns are full. The cistern capacity is variable depending on the water used for irrigation and/or percolated back into the ground. The remainder of the site, approx. 3500 sq/ft, is covered with permeable pavers so that stormwater percolates back into the ground.

Community & economic benefits that have resulted from the project: As a much-needed upgrade to a run-down building and grounds, the project definitely enhanced exisiting property values and increased the value of the subject property. The paver courtyard out front provides

a gathering place for both residents and neighbors in the area.