



Green Infrastructure & Stormwater Management CASE STUDY

St. Augustine Catholic Church

Location: Brighton, CO

Client: St. Augustine Catholic Church

Design Firm(s): Bernard's Custom Construction - Jeff Bernard

Landscape architect/Project contact: Continental Hardscapes - Tris Bars (Installer)

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ASLA Chapter: Colorado

Project Specifications

Project Description: The project is a parking lot for the church. Existing storm sewer infrastructure in Brighton exceeded capacity. The church was encouraged to see alternative designs to manage the stormwater.

Project Type:

Commercial

A retrofit of an existing property

Design features: Porous pavers.

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

Local ordinance, developer/client preference

Impervious area managed: 1 acre to 5 acres

Amount of existing green space/open space conserved or preserved for managing

stormwater on site: Not sure. They replaced an existing asphalt parking lot so cannot determine if any additional space was conserved.

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? Useable space was the primary concern.

The church grew from 12 families in 1887 to over 800 families that currently attend the church. Utilizing the existing space nearby was crucial as there was no other space available around the church that could be converted without major changes to the current facility.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$100,000-\$500,000 (Public funding: None- private funds)

Related Information: paver cost- \$3.00 sq/ft gravel cost- \$2.00 sq/ft Labor cost \$1.50 sq/ft - project was mechanically installed which assisted in keeping the costs of labor low.

Was a green vs. grey cost analysis performed? No, there was not an extensive cost analysis done but what was looked at was up front costs of the pavement which pretty comparable and the lifecycle costs of the pavement -- the pavers would have a lower lifecycle cost when it comes to replacement and maintenance that may be required. Also, because there was no room for storm water infrastructure- those costs were saved as well.

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

design/development project: Not sure if any green space or open space was preserved since the parking area was already in place.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Slightly reduced costs (1-9% savings). It is hard to determine what the cost savings were but the up front costs of the pavers was comparable to the costs of standard impermeable paving choices. Lifecycle costs also added value to the project as pavers typically have a lower lifecycle costs than the traditional pavements as well.

Number of jobs created: Not available

Job hours devoted to project:

Planning and Design: Not available

Construction: spanned over 2 years due to seasonal construction restrictions

Annual Maintenance: Not available

Performance Measures

Stormwater reduction performance analysis:

Stormwater retention should be close to 100%. The initial permeability for the Eco-Priora paver used on the project is over 100-inches per hour. Even with extended use the project will still maintain a steady infiltration rate (even if it decreases from the 100-inches per hour) that will meet the majority of current stormwater management plans.

Community & economic benefits that have resulted from the project: There are not only the aesthetic improvements of the pavers versus the drab, cracked asphalt but it has also

enhanced safety in the parking area for the parishioners. Icing is typically a problem with standard pavements and with the old parking lot they had concerns with safety. The permeable pavers allow the precipitation to infiltrate immediately greatly reducing the risk of icing in the parking lot.

Additional Information

Links to images: <https://www.facebook.com/album.php?id=211379018876792&aid=64827>