St. Paul's Cathedral and Neighbors' Rain Gardens

St. Paul's Episcopal Cathedral in downtown Des Moines has transformed their old asphalt parking lot into an urban green-space that models good water practices and makes the site more beautiful and pedestrian friendly. And they can still park 40 cars there.

The project improves water quality and reduces stormwater runoff in the southeast corner of 9th and Pleasant Streets in downtown Des Moines while creating a beautiful public space where passersby can relax and enjoy themselves.

Cathedral Dean Cathleen Bascom voices a spiritual vision for the renovation, "Stewardship is about recognizing the gifts we have from our Creator and responsibly caring for and generously sharing them." And she reports that in the process of deciding what to do, church leaders began to ask, "What is the most responsible and most generous stewardship of this gift of land?"

St. Paul's has been involved in flood recovery networks and projects in the city giving them a heightened awareness of the need for good on-site water management. And many people working in the downtown area traverse the land of St. Paul's daily.

So when the congregation of St. Paul's considered the necessary repairs of the parking lot they asked, "How can we be a part of the water management and water quality solutions needed in our area and most benefit our many downtown neighbors?"

What is a rain garden? A bio-retention cell or rain garden is a depressed area with porous backfill under a vegetated surface. These areas often have an underdrain to encourage filtration and infiltration, especially in clayey soils. They recharge groundwater, remove pollutants, and detain runoff. Rain gardens are an effective solution in parking lots or urban areas where green space is limited.

The resulting vision was to transform the asphalt-covered grounds into a crescent of rain gardens along a porous pedestrian walkway and additional porous elements, including porous asphalt for the area of greatest run-off in the parking lot– all highlighting good water management practices. The tree-lined walkway borders rain gardens with seating to allow passersby opportunities for rest and refreshment while bringing environmental healing to the site.

This physical transformation also provides educational opportunities for the many downtown workers who traverse these grounds daily and urban neighbors, particularly the PACE Juvenile Center.

The success of the project is measured by a water quality volume formula in the Iowa Stormwater Management Manual and approximated in this project. Good water management practices such as porous pavement and bioretention cells, (the rain gardens,) make up 10% - 15% of the site area. These new measures manage 100% of the water runoff from the impervious part of the parking lot and from the roof by reducing pollutant concentrations in the runoff and reducing the water impacts from high stormwater flow rates.

Funding for the new rain garden came from a variety of sources including the Iowa DNR, Polk County Conservation District and the Iowa Infrastructure Investment Initiative.

In addition, St. Paul's received in-kind assistance from the Polk Soil and Water Conservation District (SWCD), the Polk County Conservation Board, the Friends of the Botanical Center, Drake University urban environmental history faculty, and RDG landscape architects. The garden is cared for by St. Paul's Weekly Weeders and a few other affiliates from the community.

For more information about St. Paul's garden, contact the church at administrator@cathedralchurchofstpaul.org

Permeable pavers were installed atop the porous fill allowing water to flow down into the subterranean drainage system.

Resource for more information on best water management practices from the EPA: http://www.epa.gov/oaintrnt/stormwater/best_practices.htm

See the site concept drawing below.

RDG PLANNING • DESIGN

Cathedral Church of St. Paul

Green Site Concept

Legend

1 Rainwater Fountain with Seating
2 Labyrinth Walk
3 Rainwater Rill / Runnel
4 13 Trees
5 Porous Pavement with Water Detention
6 Bioretention Cell
7 Dumpster with Enclosure
8 40 Parking Stalls (2 HC)
9 Existing Ash Trees
10 Perforated Metal Scrim Wall
11 Gathering Space / Outdoor Chapel
12 Entry Vestibule
13 "The Point" Kiosk & Screen
14 Stairway to Roof
15 Possible Green Roof (needs further study)
16 Alley Improvements Including:
- Designated Pedestrian Walkway
- Porous Pavement
- Green Transition - Between Alley & Pace Property

17 Planters / Trellis at Green Roof & Courtyard
18 Rainwater Collectors
19 Kiosk / Rainwater Collector
20 Streetscape Improvements
21 **Coffee Cart Location**

Green Site Concept

project #:283.88

St. Paul's Episcopal Church - Des Moines, Iowa

RDG Planning & Design 301 Grand Ave., Des Moines, Iowa 50309 515-288-3141

06.10.09