



Green Infrastructure & Stormwater Management CASE STUDY

Danada Visitor Gardens

Location: Wheaton, IL

Client: Citizens of DuPage County and Beyond

Design Firm(s): FPDDC - Office of Planning

Landscape architect/Project contact: Kevin Horsfall, ASLA, Landscape Architect Supervisor

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ASLA Chapter: Illinois

Project Specifications

Project Description: The Danada Visitor Gardens project transformed 13 acres of grounds around the Danada House, promoting sustainability, which is highlighted by the permeable paver roadway and parking area; permeable synthetic turf in the west garden; recycled composite fencing; rain water harvesting cistern; rain gardens; and a planted green retaining wall. In addition, woodland, wetland and prairie areas have been improved and are linked via an accessible trail that includes interpretive signage and benches for wildlife viewing. Other elements of the project include brick paving, decking, lighting, fountain and water features, garden arbors and pergola, signage, benches and many new garden/activity areas to support weddings and special events. The unifying theme of the gardens focuses on Danada's rich equestrian history.

Project Type:

Open space - garden/arboretum

A retrofit of an existing property

Design features: Rain garden, cistern, porous pavers, curb cuts, constructed wetland and native vegetative / garden filterstrips / reduction of existing impervious surfaces. The site was generally constructed so that no additional underground drainage pipe and structures would be necessary and that all runoff would infiltrate as much as possible on site.

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

County 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: greater than 5 acres

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, we were committed to making this a sustainable facility not only from a stormwater management standpoint but also from many of the materials that were introduced. Essentially we wanted it to be an outdoor education center. Permeable synthetic turf, high efficiency lighting, future 20KW solar array, use of fencing materials that are 100 % recyclable or include flyash, use of low maintenance composite materials that won't splinter rot or require painting (Azek Decking & Trimboards for all garden structures).

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$1,000,000-\$5,000,000 (Public funding: State, local, \$400,000 funding by State of Illinois OSLAD Grant, \$25,000 by private donor.)

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 a Forest Preserve District our mission is to preserve and protect open space so it didn't increase costs because we have always been fully committed to attempting to incorporate native landscaping and BMP's into our site designs. In fact many of the 25,000 acres of land that our organization maintains provides flood control and wetland banks for adjacent communities.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Did not influence costs. Basically, it ended up being a wash as some improvements saved money and others cost a little more. I would venture that at a slightly larger scale it would reduce costs, however - i.e. constructing a 30,000-40,000 sq/ft permeable paver parking lot instead of a 10,000 sq/ft. Our project included a smorgasboard of BMP's in completing a treatment train for the entire site. However, all of the BMP's were relatively small in scale but when combined they significantly reduced runoff from the site. The small scale of each element did not provide significant cost savings upfront however long term maintenance costs should be lower.

Number of jobs created: I don't know if it created new jobs, but it did provide jobs for various trades.

Job hours devoted to project:

Planning and Design: 1.5 Years / 3 Designers on/off / Don't have actual hours

Construction: 1 Year

Annual Maintenance: Hasn't increased what was previously provided. Maybe slightly more short term with BMP performance standards.

Other: 1.0 Year to Research and Develop Program

Performance Measures

Stormwater reduction performance analysis:

100%, we seen significant drainage improvements in various areas that generally held water in the past or were completely unusable by preserve visitors or people who rented the Danada House & Ground for weddings/meetings. Any areas that previously held water for several days after rain events are now completely dry within hours or by the next day.

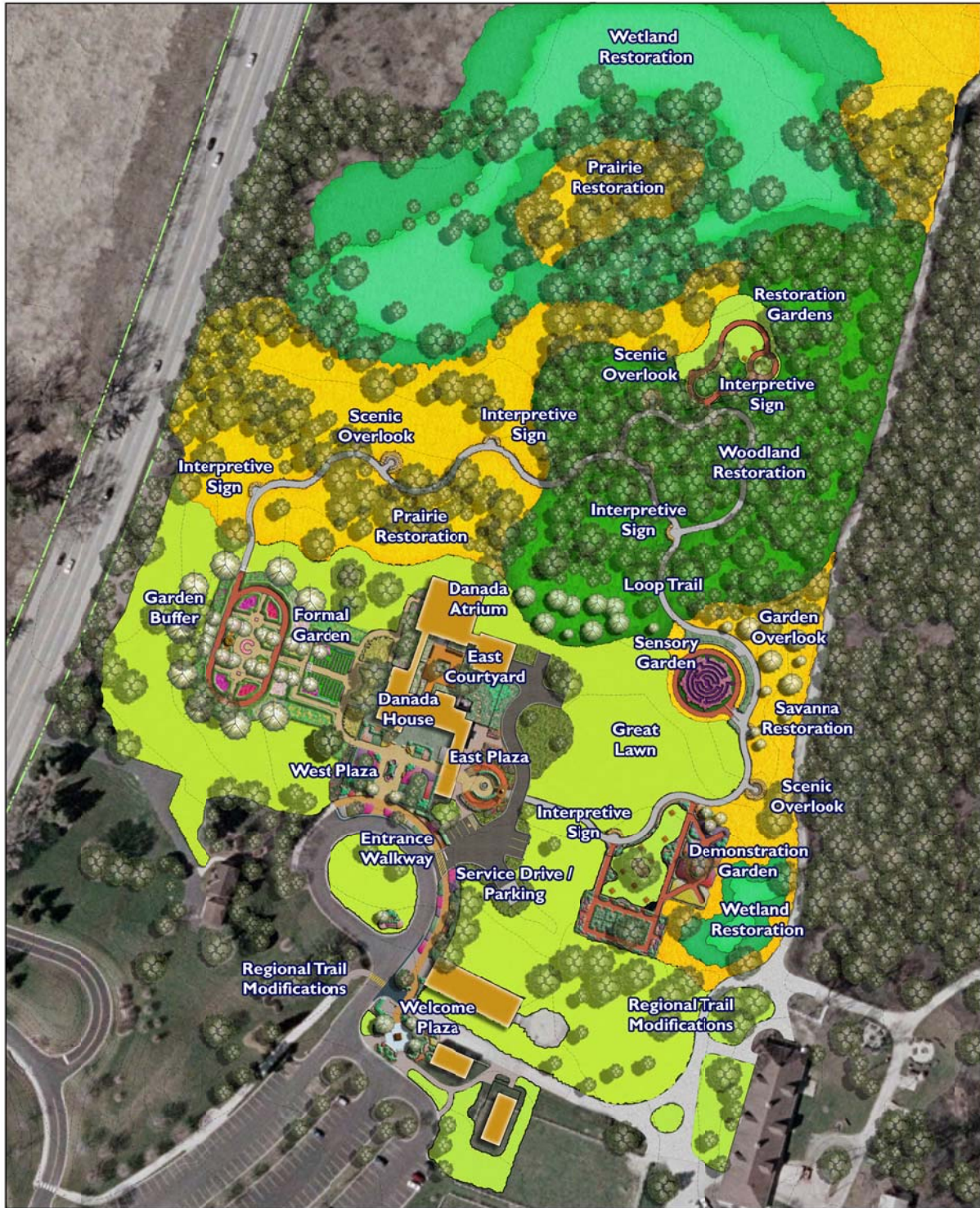
Community & economic benefits that have resulted from the project: The project was completed in May of 2010 and provided job opportunities for various trades including, excavators, paving contractors, landscapers, carpenters, electricians and architects. Furthermore it has created a unique place where the general public as well as elderly and disabled persons can be brought to the threshold of nature where in a short 15-20 minute stroll can experience woodlands, wetlands, prairie, & formal gardens along a .5 mile trail themed to the rich equestrian history of the 600 acre Danada Farm. The facility further enhances wedding events (very high demand now) held at the house and in the various gardens which all include some type of BMP or LID in the background. The BMP's are integral parts incorporated into each garden space in a simple yet elegant way that actually enhances site aesthetics and increases the use of the facility.

Additional Information

Links to images:

http://www.dupageforest.com/media/files/cms/District_News/Project_Updates/Plan%20Overview.pdf

<http://www.dupageforest.com/page.aspx?id=4294968374>



Danada Visitor Garden Design Development Plan

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