



# Green Infrastructure & Stormwater Management CASE STUDY

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## Washington National Cathedral Olmsted Woods

**Location:** Washington, DC

**Client:** Washington National Cathedral

**Design Firm(s):** Andropogon Associates

**Landscape architect/Project contact:** Marita Roos, ASLA

**Email:** [maritaroos@urbanbiology.net](mailto:maritaroos@urbanbiology.net)

**ASLA Chapter:** Texas

### Project Specifications

**Project Description:** The Olmsted Woods suffered from tree loss and stream degradation due to large piped stormwater volumes from the Cathedral roof into the woodland ravine.

Andropogon Associates and Cahill Associates developed a plan to divert the 1 ½ -year storm into a series of infiltration trenches and subsurface storage at the head of the ravine. Water that previously was eroding the channel and causing groundwater loss was captured and released slowly following storm events. Stream check dams allowed water to infiltrate the groundwater layer for the benefit of the woodland oaks. Completed in 2005, the project has been cited in several national publications and conferences and is used as a model by the District of Columbia.

#### **Project Type:**

Institutional/education

A retrofit of an existing property

**Design features:** Bioswale and diversion from existing stormwater culverts into subsurface detention / infiltration.

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

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:** 1 acre to 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?** Preservation and restoration of historic woodland.

## Cost & Jobs Analysis

**Estimated Cost of Stormwater Project:** \$100,000-\$500,000 (Public funding: Local)

**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:** Not applicable. The site was already preserved.

**Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)?** Not applicable

**Number of jobs created:** 4 for project installation

**Job hours devoted to project:**

Planning and Design: 800

Construction: 2,600

Annual Maintenance: 40

## Performance Measures

**Stormwater reduction performance analysis:**

Estimated 1 ½ -year storm event retained on site.

**Community & economic benefits that have resulted from the project:** Enhancement of Olmsted Woods pathway and woodland for benefit of tourists, local residents and cathedral attendees. Improved walking access for nearby St. Albans and Beauvoir schools.

## Additional Information

**Links to images:** [www.andropogon.com](http://www.andropogon.com)