



Green Infrastructure & Stormwater Management CASE STUDY

Deaderick Street Renovation (Green Street)

Location: Nashville, TN

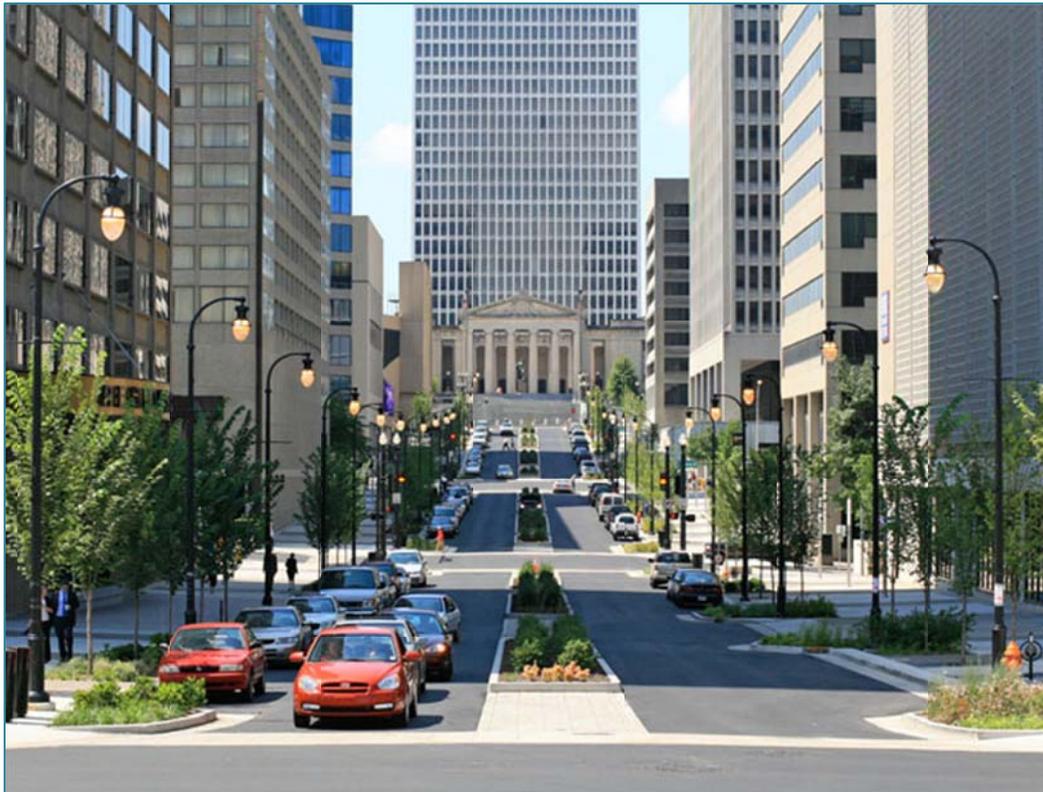
Client: Metropolitan Government for Nashville Davidson County, Tennessee

Design Firm(s): Hawkins Partners

Landscape architect/Project contact: Kim Hawkins, ASLA

Email: k.hawkins@hawkinspartners.com

ASLA Chapter: Tennessee



Project Specifications

Project Description: The project involved the renovation of Deaderick Street in Downtown Nashville. The renovations primarily focused on addressing stormwater issues and urban trees. It was the region's first green street. The renovations included removing those trees and providing larger and deeper planting areas that would not only give a larger volume of soil for

the tree roots, but also provide rain garden areas in which the stormwater could travel to, thus reducing the loads into the existing combined sewer/storm system. Bioretention zones were implemented in pedestrian bulbs at the intersections and in relation to the existing catch basins. These planting areas were also excavated to a depth that would accept enough engineered soils to allow infiltration and planted with plants that can adapt to the extremes of wet and dry conditions. Pervious area within the corridor was increased by over 700%.

Project Type:

Transportation corridor/streetscape
Part of a redevelopment project

Design features: Bioretention facility, rain garden, and porous pavers.

This project was designed to meet the following specific requirements or mandates: Desired by the City as a pilot project for green street projects

Impervious area managed: 1 acre to 5 acres



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

managing stormwater on site: 5,000 sq/ft to 1 acre. Approximately 13,000 sq/ft of additional landscape areas and 1,200 sq/ft of pervious concrete were added in the corridor. This increased the pervious surfaces in the corridor by 700%.

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? The City wanted to create a sustainable site demonstration that would serve as an example for future public and private projects within the City and beyond. It was another step toward the administration's goal of becoming "The Greenest City in the Southeast". The street renovations included custom LED pedestrian fixtures and solar parking meters for energy efficiency.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$1,000,000-\$5,000,000 (Public funding: Local, Metro Nashville Capital Project)

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: Since the renovations involved all areas of the corridor and they either had to be paved or landscape, the addition of landscape areas did not add to the overall cost of the project. Pervious concrete areas had a slight premium over conventional broom-finished concrete.

Cost impact of conserving green/open space for stormwater management over

traditional site design/site development approaches (grey infrastructure)? Did not influence costs. While the improvements reduced the quantity and quality of water entering into the City's stormwater infrastructure, the project utilized existing infrastructure, so the opportunity to downsize system was not an option.

Number of jobs created: Unknown

Job hours devoted to project:

Planning and Design: 2100 / HPI Only

Construction: Not available

Annual Maintenance: Not available

Performance Measures

Stormwater reduction performance analysis:

It is estimated that the improvements remove over 1.2 million gallons of stormwater annually from the current system as compared to the previous conditions or approximately 95% of the stormwater.

Community & economic benefits that have resulted from the project: In order to activate the street, the project included areas for future retail kiosk, additional retail space adjacent to the corridor, and demonstrated opportunities for residential units. The design of the space has also instilled civic pride and enhanced the connection between the major local and state government public spaces (i.e. Legislative Plaza, Nashville's Public Square). In addition, it was designed to accommodate infrastructure for street festivals.

Project Recognition

2010 ASLA Tennessee Chapter Honor Award; American Society of Civil Engineers (ASCE) Tennessee Chapter Project of the Year

Additional Information

Links to images: <http://hpi.green.com/2009/10/28/deaderick-streets-transformation/>
<http://www.hawkinspartners.com/projects-sustainable-planning/deaderick-street-streetscape>

- Additional sustainable site elements included:
- Crushed and recycled concrete used for the pavement subbase,
- Fly ash utilized in the concrete mix,
- High Use of recycled steel for amenities
- Porous concrete,
- LED light fixtures,
- Native and drought tolerant plant materials,
- Solar powered parking meters,
- Water efficient irrigation system,
- Many local vendors and fabricators,
- The addition of bike racks to help encourage a healthier way to travel, and
- The addition of recycling receptacles along the street.