



Green Infrastructure & Stormwater Management CASE STUDY

Rome Canopy Restoration Project

Location: Rome, NY

Client: City of Rome, New York

Design Firm(s): Plumley Engineering

Landscape architect/Project contact: Christian Mercurio

Email: cmercurio@romecitygov.com

ASLA Chapter: None.

Project Specifications

Project Description: Rome Canopy Restoration Project consisted of a three-pronged approach: Pervious retrofit of downtown streetscape, tree planting in urban core, and performing an inventory & analysis of public trees in the City of Rome. The pervious retrofit used 100% recycled rubber paving material with a base of CU Structural Soil for the rooting medium. Tree planting consisted of planting 450 trees in our urban core, and the STRATUM Analysis quantified the stormwater benefits of our urban canopy.

Project Type:

Transportation corridor/streetscape

A retrofit of an existing property

Design features: Bioretention facility, downspout removal, porous pavers, pervious rubber pavement, Cornell University Structural Soil base material (for structural support, bioretention, and expanded rooting volume), and tree planting for canopy-related stormwater benefits.

This project was designed to meet the following specific requirements or mandates: To meet funding criteria, developer/client preference

Impervious area managed: 5,000 sq/ft to 1 acre

Amount of existing green space/open space conserved or preserved for managing stormwater on site: 5,000 sq/ft to 1 acre

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 worked together with local businesses to enhance access and aesthetics of their properties.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$100,000-\$500,000 (Public funding: Federal, state - NYS Environmental Facilities Corporation, US HUD CDBG Funding)

Related Information:

- Concrete = \$90,000
- Flexi-Pave pervious rubber paving material (100% recycled rubber) = \$40,000
- CU Structural Soil (sub-base for flexi-pave) = \$15,000
- Tree Planting (450 Trees) = \$90,000
- Municipal Tree Inventory & STRATUM Analysis = \$25,000
- *All costs are approximate

Was a green vs. grey cost analysis performed? Yes, up front investments were slightly more expensive than hardscape, but provided better long-term benefits.

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

design/development project: Not significantly. We found that the engineering firm was excited to work on a more innovative design that exposed them to new materials and specifications. It went very smoothly.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Slightly increased. The CU Structural Soil & Flexi-Pave application certainly cost more than traditional soil, turf, or concrete. However, long-term maintenance costs dropped to nearly zero; while providing an optimal environment for canopy growth in what used to be an impervious moonscape. So, taken with the benefits of reduced labor, maximization of the benefits of an urban canopy, and reduction of stormwater runoff into our system, I'd say its a no-brainer.

Number of jobs created: 2 (temporarily, at least)

Job hours devoted to project:

Planning and Design: 80

Construction: 340

Annual Maintenance: 32

Performance Measures

Stormwater reduction performance analysis:

Specifically related to the above-curb, pedestrian right of way: 90% of stormwater infiltrates into the Flexi-Pave and Structural Soil stormwater bank, and eventually dissipates naturally. Roof area and concrete are pitched toward these areas. On the street corners, we anticipate that some water (10%) makes it to the catch basin. Previously, 98% went directly to the catchbasin, with a few hundred gallons making it to the tree pits.

Community & economic benefits that have resulted from the project: Concurrently, in a strategic and targeted approach, two mixed commercial-residential structures were completely renovated on the same block by a local non-profit (the Rome Main Streets Alliance) and have already secured new tenants for one of the buildings. Additionally, a few old businesses with poor access for elderly/mobility-impaired clientele received new pedestrian infrastructure (grading, flexi-pave surfaces) that eliminated any barriers to access. Finally, some downspout and drainage problems were eliminated through creative use of flexi-pave (porous pavement).

Additional Information

Links to images: <http://www.romenewyork.com/organization.asp?orgid=367>

<http://www.youtube.com/watch?v=mms7ajih8as>

Since the inception of this project, the City of Rome has adopted principles of green infrastructure on new streetscape projects and brownfield redevelopment projects. We are currently designing two more city blocks utilizing the specifications we developed during the GIGP project. The City has planted over 500 trees in our urban neighborhoods. We have cleaned up a 4-acre brownfield and converted it into a 4-acre bioswale amidst 20 acres of industrial property. An finally, we have completed the design phase of a transformational brownfield redevelopment plan to retrofit a 100% concrete site with a 5-acre green waterfront parking lot and recreation area that employs 3 types of pervious surfaces, rain gardens, bioswales, LED technology, terraced waterfront, and multiple-use recreational greenspace.