Green Infrastructure & Stormwater Management
CASE STUDY

Preston Residence

Location: Kent, CT
Client: James and Faye Preston
Design Firm(s): Wesley Elsworth Lent ASLA, Project leader, Lydia Straus-Edwards A.I.A.
Landscape architect/Project contact: Wes Lent, ASLA
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ASLA Chapter: Connectcut

Photo: New England Home

Project Specifications

Project Description: A 45-acre hilltop property. Confirmed suitability of use for the client. Sited the home. Chose the Architect. Provided all site consultants. The project had one overriding criteria as suggested by our firm "design to fit the existing site" involving the preservation of existing trees and shrubs with replacement of existing plant species or the use of other befitting species after construction. The use of all native stone as discovered on the site (including house veneers, window lintels and sills, steps,walls and flat terracing). Designed 1989.

Project Type:
Single family residential
Part of a new development

Design features: Bioretention facility, bioswale, downspout removal, an porous pavers.The 10,000 sq/ft main courtyard was entirely gravel and some dry set native stone pavers. No gutters or leaders were used.

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

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? No, only that the aesthetic and practical considerations retained the natural qualities of the site.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: $50,000-$100,000 (Public funding: None)

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: All systems were predicated on deflecting the stormwater back into its normal channels quickly with almost 100% percent use of permeable pavements,underground eave drains etc. This reduced the use of extensive, complicated piping/artificial detention basins or other high cost structures. Where hard pavement on 1,500 l.f. of 10% driveway was required grass swales were used with calculated cross drains at close intervals with open to air headwalls and 200% spread pads. No erosion since 1990!

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Significantly reduced costs (10% or greater savings).

Number of jobs created: 40 +/-

Job hours devoted to project:

Planning and Design: 520

Construction: 1 1/2 years
Annual Maintenance: Minimal

Performance Measures

Stormwater reduction performance analysis:
100% other than any original normal crossing waterways. No surface water was developed on this large site beyond the original undeveloped condition.

Community & economic benefits that have resulted from the project: The client had retired and was so satisfied he has become a community leader and has privately developed and enhanced the business sector of the town. This has increased the development of the area. He is still committed as a leader in the local government.

Project Recognition

New England Home, Magazine 'Into The Woods' May/June 2009

Additional Information

Links to images: www.nehomemag.com (go to may/june 2009 search) click HOMES & GARDENS

Due to prior projects performed for these clients to their satisfaction, we were given carte blanche and were able to employ innovative 'green techniques' at a time when there was no emphasis on them. Overall consideration of all current conditions and future possibilities must be met to meet or exceed the current standard.

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