Special Recognition: Wright-Pierce

Wright-Pierce receives one of two Special Recognition Awards for Engineering Excellence for its work with Guiteras School. The Town of Bristol, RI received a Clean Water Act grant to address stormwater runoff of Canada geese waste pollution from the Guiteras School campus into Silver Creek, a coastal estuary draining into Rhode Island's Bristol Harbor. The water quality of the runoff from the site was improved by a design which integrated multiple, innovative stormwater treatment measures into the site redesign including strategically placed bioretention ponds and the planting of more than 1,000 native plants, all designed to provide filtration of stormwater accumulation on the site and to discourage Canada geese from occupying the lawn adjacent to the creek. Safety improvements on the elementary school campus were another positive feature of the design including new sidewalks, cross walks and improved traffic patterns.

Guiteras School Stormwater Retrofit

Bristol, Rhode Island

Owner: Town of Bristol, RI
Entrant: Wright-Pierce, Topsham, ME

Wright-Pierce
Engineering a Better Environment

ACEC
100 Years of Excellence

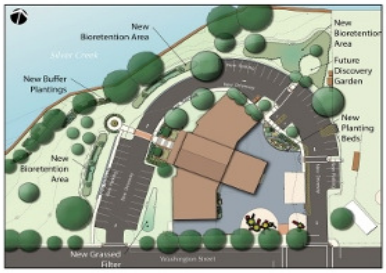
Project Description

The Town of Bristol received a Clean Water Act Section 319 non-point source water management grant for the design and implementation of water quality improvements on the campus of the Guiteras School. The grant was administered by the Rhode Island Department of Environmental Management and Bristol's Department of Community Development.

Constructed in 1925, the Guiteras School abuts Silver Creek, a coastal estuary draining into Bristol Harbor. When the project began, mowed grassed areas extended from the parking lot to a retaining wall along the Silver Creek border. Parking spots were not clearly defined, and excess paving contributed to stormwater runoff. The lawn attracted Canada Geese, and their waste was flushed into Silver Creek with every significant rain storm.

Wright-Pierce worked with a broad stakeholder committee to design treatment measures for non-point sources of runoff and to discourage Canada Geese from using the lawn. Changes to parking, driveways, and paved play areas resulted in a reduction in the overall impervious surfaces of approximately 5,000 square feet. Three bioretention basins planted with a mix of woody and herbaceous plants were installed to provide water quality treatment for runoff from parking lots, driveways and roof surfaces. Pre-treatment measures, including peastone diaphragms and grassed filter strips, were incorporated to improve water quality. The project relocated an existing roof drain discharge to a new grassed soil filter basin. The water quality improvements fit harmoniously into the existing site, maintaining existing traffic patterns and accommodating the future installation of a Discovery Garden.

Site Plan and Photos



The school's front door was given clear emphasis with a new crosswalk, the flagpole was enhanced with ornamental plantings, and new sidewalks were added to separate pedestrian and vehicular circulation.

To discourage Canada Geese, grasses and shrubs were planted adjacent to the Creek and trees were planted in the lawn. Bioretention basins located along the driveway and parking areas collect and treat sheet flow.

The changes within the play yard have replaced asphalt with plants, stepping stones and logs. Space was reserved in the center of the largest bioretention area for a Discovery Garden created by parents and volunteers.