



Protecting Long Island Sound from CSOs: Two Progressive Projects at Yale University, New Haven, Connecticut



NEIWPCC 19th Annual NPS Conference, Mystic, Connecticut, May 19, 2008
Terrance Gallagher, P.E.

Science Hill Parking Garage

Owner: Yale University
 Architect: Herbert S. Newman and Partners
 Civil Engineer: Tighe & Bond, Inc.
 Landscape Architect: Towers Golde LLC
 Construction Manager: Whiting-Turner Construction Co.
 Contractor: R. Camputaro & Son Excavating
 Status: Completed Spring 2007

- Pre-construction site (parking lot) drained surface water into combined sewers
- Phased construction replaced old clay tile laterals with new water-tight sewers
- Braced excavations to protect adjacent property
- Tree protection to minimize disturbed area
- Wetlands protection and sediment & erosion control during construction
- Oil separator for floor drains
- Vortech unit to remove 80% TSS from upper deck runoff
- Infiltration trench distributes treated runoff into wetland
- Wetland restoration area and detention inlet regulate inflows
- Stormceptor treats residential parking lot runoff
- Bio-Filter basins and drywells encourage ground water recharge
- Sewer separation out to Mansfield St. in preparation for future sewer separation project by City of New Haven
- Project won the 2007 Honor Award from CT Chapter AIA



Challenges

Developing tight urban sites containing historic architecture while eliminating stormwater runoff entering combined storm and sanitary sewer systems is not always easily accomplished. Yale's sustainable design program requires that water quality renovation measures be incorporated into site plans.

Solutions

Tighe & Bond developed a variety of stormwater BMPs that fit within the confines of each project, without disrupting adjoining property, meeting both Yale's building goals and GNHWPCA requirements.

David S. Ingalls Rink

Owner: Yale University
 Architect: Kevin Roche John Dinkeloo and Associates LLC
 Civil Engineer: Tighe & Bond, Inc.
 Landscape Architect: Towers Golde LLC
 Construction Manager: Turner Construction Company
 Site Contractor: R. Camputaro & Son Excavating, Inc.
 Status: Under Construction Spring 2008

- Eero Saarinen design from 1958 is the only CT building on AIA's 150 Favorite Buildings in America List
- Yale wanted to incorporate sustainable design while providing historic building preservation
- Needed to avoid impacting existing underground utility system
- Underground addition for locker rooms and other facilities
- Total impervious cover is decreased by removing some surface parking and adding landscaping
- GNHWPCA requested recharge per new design standards to avoid wet weather impacts to pump stations and treatment plant
- Sediment & erosion control and braced excavations during construction
- Relocate existing roof drains and sanitary laterals
- Incorporate underground drywells and galleries to provide groundwater recharge
- Storm and sanitary sewer separation out to Mansfield St.
- Ultra-Urban catch basin inserts by Abtech Industries to provide trash, TSS and stormwater filtration
- Infiltration trench added to existing parking lot to promote groundwater recharge



Tree Protection



Sediment & erosion controls/shoring.



Sewer separation.



Biofilter basins.



Groundwater recharge drywells.



Vortech unit for garage.