PROBLEM:

PARKING LOT STORMWATER RUNOFF TRADITIONALLY FLOWS OVER AN ASPHALT (IMPERVIOUS) SURFACE. THE RUNOFF ACCUMULATES AND TRANSPORTS CONTAMINANTS SUCH AS PARTICULATES, OILS, FLOATABLES AND TRASH BEFORE ENTERING CATCH BASINS AND WATERBODIES.

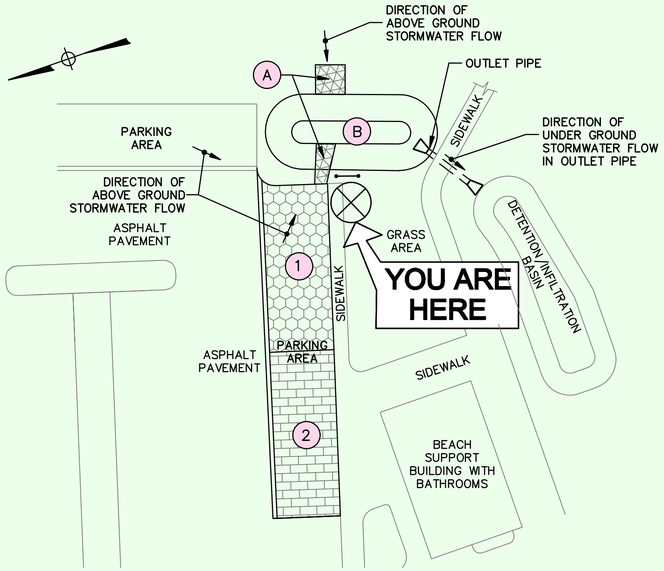
HOLE-IN-THE-WALL PARKING LOT

LONG ISLAND SOUND STORMWATER QUALITY IMPROVEMENTS

ECO-STONE®, AQUA-BRIC®, LANDLOK,® GRASS DRAINAGE SWALE

SOLUTION:

PERVIOUS SURFACE PARKING LOTS ARE CONSTRUCTED TO FILTER, TREAT AND DECREASE STORMWATER RUNOFF THEREBY REDUCING CONTAMINANTS ENTERING CATCH BASINS AND WATERBODIES.



Map

(Plan)

Important Note:

There is no formal drainage system (catch basins) in this portion of the parking lot to collect stormwater runoff.

Interesting Facts

Rain that falls on the parking surfaces flows into the voids of several pervious surface components. The voids hold water until it is absorbed by the soil below. Water that is not absorbed by the pervious surfaces recharges the groundwater or flows into the grass drainage swale.

The outlet pipe in the grass drainage swale has an elevation that is higher than the bottom of the drainage swale forcing water to be absorbed into the ground. Maintenance of the drainage swale is accomplished by mowing the grass and periodically removing the accumulated sediment.

Stormwater treatment components were added to enhance water quality, protect soil from erosion or flooding and to stabilize vegetation.

Pervious Parking Surface Components

Item	Layers	Description
1 ECO-STONE® PAVERS For parking spaces in this location		**ECO-STONE® and AQUA-BRIC®** pavers are concrete units that interlock with one another, but leave open, void spaces between the pavers facilitating rainwater infiltration, reducing stormwater runoff and recharging/storing groundwater. These void spaces commonly referred to as joints can be filled with stone or topsoil and grass. Pavers can support heavy vehicular loads for use in parking lots, driveways, pedestrian plazas, medians and low speed roadways. Pavers offer an aesthetically pleasing, "curb appeal" alternative to asphalt pavement and provide an eco-friendly solution of carrying contaminants off the surface before entering storm drains and ultimately the ocean.
2 AQUA-BRIC® PAVERS For parking spaces in this location		Advantages: • Wide assortment of colors, shapes, patterns and textures • Stronger than traditional asphalt paving materials • Reduces stormwater runoff and flooding • Pedestrian friendly • Skid and slip resistant • Undamaged by oil and gas spills • Can be removed for underground access without leaving a patch • Helps improve water quality

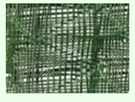
ADDITIONAL PROBLEM:

CONCENTRATED STORMWATER TRADITIONALLY IS CONVEYED BY BURIED PIPES THAT PREVENT EROSION. THIS METHOD DOES NOT ALLOW FOR INFILTRATION (RECHARGE) OR FILTRATION (CLEANING) OF WATER.

SOLUTION TO ADDITIONAL PROBLEM:

STORMWATER TREATMENT COMPONENTS SUCH AS A TURF REINFORCEMENT MAT (TRM) STRENGTHENS THE SOIL AND PREVENTS EROSION ALLOWING GRASS DRAINAGE SWALES TO INFILTRATE AND FILTER STORMWATER.

Stormwater Treatment Components

Item	Description
A LANDLOK® TURF REINFORCEMENT MAT 	**LANDLOK® TURF REINFORCEMENT MAT (TRM)** consists of 100% polypropylene fiber woven material. This material is used for erosion protection and turf reinforcement where stormwater velocities exceed the stability of the soils and vegetation. Applications include detention basin banks, channels or swales, and steep slopes. Advantages: • High strength for loading and longevity • Material flexibility allows for fast seeding emergence and minimal soil loss • Helps prevent soil loss and root damage during storm events • UV resistant • Preferred alternative to concrete and riprap stone
B GRASS DRAINAGE SWALE	**DRAINAGE SWALES** are low-lying, typically grass-lined, stretches of land used for conveyance of stormwater at higher velocities and moderately steep slopes. Swales are designed to manage stormwater runoff, filter contaminants and increase rainwater infiltration to reduce flooding and downstream erosion. For this demonstration a man-made swale was designed and constructed using topsoil and grass.

Acknowledgements

Eco-Stone® and Aqua-Bric® pavers donated by:

Ideal Concrete Block Company, Inc.
45-55 Power Road
Westford, MA 01886
1-800-24-Ideal
www.idealconcreteblock.com

Landlok® donated by:

Grid Technologies, Inc.
Admiral's Gate Tower, Suite 507
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Educational Corner

Terms to study:

- Pervious parking surface
- Permeable pavers
- Detention/Infiltration basin
- Turf Reinforcement Mat (TRM)
- Drainage swale
- Catch basin
- Polypropylene
- Low Impact Development (LID)