PROBLEM:

STORMWATER IN PARKING LOTS TRADITIONALLY FLOWS OVER ASPHALT, ACCUMULATING CONTAMINANTS LIKE SEDIMENT, OIL AND TRASH BEFORE ENTERING A CATCH BASIN.

HOLE-IN-THE-WALL PARKING LOT

LONG ISLAND SOUND STORMWATER QUALITY IMPROVEMENTS

TURFSTONE™ PAVERS AND GRASS FILTER STRIP

SOLUTION:

PERVIOUS PARKING SURFACE COMPONENTS WERE ADDED SO THAT STORMWATER WOULD BE FILTERED INTO THE GROUND REDUCING CONTAMINATED RUNOFF.

What are Turfstone Pavers?

TURFSTONE™ pavers are concrete block (grid–like) units that consist of openings or voids filled with a variety of materials. These voids comprise 40% of the pavers' surface area. These pavers are considered permeable or pervious parking surface components. Pavers offer both "greenspace" pavement design and the structural performance of high–strength concrete.

Peastone or topsoil planted with grass may be used to fill the voids between pavers. Stone offers the infiltration of stormwater back into the soil for stormwater runoff management. The use of topsoil planted with grass where traffic and parking occur is considered preserving "greenspace". The topsoil is kept 1/4" to 1/2" below the surface of the blocks to prevent tires from bearing directly on the grass. The grass roots help to maintain the porosity of the soil by creating pathways for water to enter the soil.

A stone layer directly below the pavers acts as a leveling surface that can be screeded (no fabric required). A second deeper stone layer acts as a stormwater reservoir which stores stormwater that has not yet infiltrated.

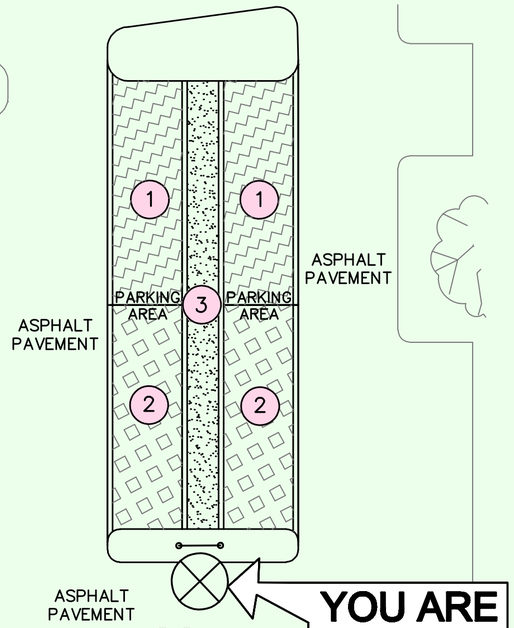
Contaminants in stormwater are treated by the grass or in the soil below the crushed stone reservoir. Treatment and infiltration prevents or reduces a direct stormwater discharge of contaminants into catch basins or adjacent waterbodies.

Interesting Studies

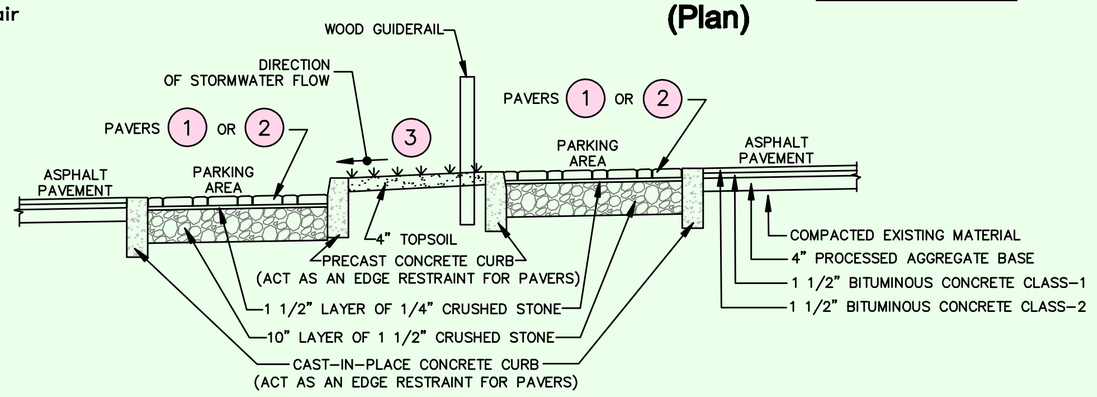
Studies show that pavers have been found to reduce surface runoff temperatures compared to the runoff from asphalt pavement. Since the permeable pavers also increase infiltration, the total heat content leaving a site is reduced substantially. Heat pollution caused by artificially warmer runoff can have negative effects on aquatic life in waterbodies.

Cities are normally warmer than surrounding areas because of the large amount of heat that asphalt and concrete absorb which in turn keeps air temperature higher. This is referred to as the "Heat Island Effect". Studies also show that air temperature can be reduced by using "greenspace" surfaces. The reduction in the need for air conditioning in turn decreases energy demand, air pollution and greenhouse gas emission.

Turfstone Paver Unit (With Grass)



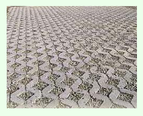
Map (Plan)



View Looking Across Parking Area

Legend of Pervious Parking Surface Components

1. TURFSTONE™ PAVERS WITH STONE
   For parking spaces in this location, 1/2" peastone is used to fill voids.



2. TURFSTONE™ PAVERS WITH GRASS
   For parking spaces in this location, topsoil planted with grass is used to fill voids.

3. GRASS FILTER STRIP
   The grass slows the velocity of the stormwater runoff allowing suspended solids (sand) to settle out and become trapped by the grass. The grass and soil also absorb and treat the stormwater, reducing the volume of runoff.

Project concept, design and construction management by the East Lyme Engineering Department.

Funding by the State of Connecticut, Small Town Economic Assistance Program (STEAP).
Administered by the State of Connecticut, Office of Policy and Management (OPM).
Managed by the State of Connecticut, Department of Economic and Community Development (DECD) and the Department of Environmental Protection (DEP).

Acknowledgements

Technical and logistical support for Turfstone™ pavers was donated by:

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

Transportation, storage and delivery of Turfstone™ pavers was donated by:

United Builders Supply Company Inc.
31 Industrial Park Road
Niantic, CT 06357
(800) 962–9948
www.unitedbuilderssupply.com

Educational Corner

Terms to study:

- Pervious parking surface
- Permeable pavers
- Interlocking Concrete Pavement Institute (ICPI)
- Grass filter strip
- Greenspace
- Heat Island Effect