



GREEN STORMWATER INFRASTRUCTURE (GSI) CASE STUDY

BEST MANAGEMENT PRACTICE (BMP) IN ACTION: POROUS PAVEMENT

Handy's Porous Parking Lot

BENEFITS

Porous pavement is a term used to describe a wide variety of surfacing materials that use pore spaces or gaps to allow for the vertical movement of stormwater into a subsurface stone reservoir. Porous pavements retain much of the durability of traditional pavements and can accommodate a variety of transportation uses. It is often used in locations where developable space is at a premium.

Such was the case at the Handy's Hotels and Rentals site in Essex Junction, VT. At this site, porous pavement allowed the developer to maximize parking while also meeting stormwater management goals. Traditional pavement would have necessitated the need for additional catch basins, pipes, and space consuming treatment practices such as detention ponds.



HANDY'S HOTELS AND RENTALS POROUS PAVEMENT PARKING LOT

PROJECT DESCRIPTION

The owner of Handy's Hotels and Rentals paved an 18,000 square foot parking lot with porous asphalt. The parking lot services a thirty-unit residential apartment building and two triplex condominiums. Runoff from the rooftops of the apartment buildings and condominiums is conveyed beneath the pavement surface for infiltration.

The project is an alternative to the standard approach of capturing stormwater in a pipe, treating it, and discharging it to surface water. The porous asphalt helps to control runoff of pollutants and protects groundwater supplies.

FAST FACTS

LOCATION:

This porous asphalt installation is located at 62 Lincoln Street in Essex Junction, Vermont.

COST:

The total cost of the installation, including labor and materials, was \$120,000. Specifically it cost \$110,000 for the pavement and crushed stone sub-base, \$9,000 for the drains, and \$900 for annual spring maintenance. A portion of the installation cost was covered by the Let it Rain Program.

CONSTRUCTION:

The installation occurred in one day when temperatures were between 50 and 60 degrees Fahrenheit, with a small crew.

DESIGN:

This project was designed by Watershed Consulting Associates and Chenette Associates.

Case study prepared by the Vermont Green Infrastructure Initiative, a program of the Watershed Management Division of the VT Department of Environmental Conservation (http://watershedmanagement.vt.gov/stormwater/htm/sw_green_infrastructure.htm)

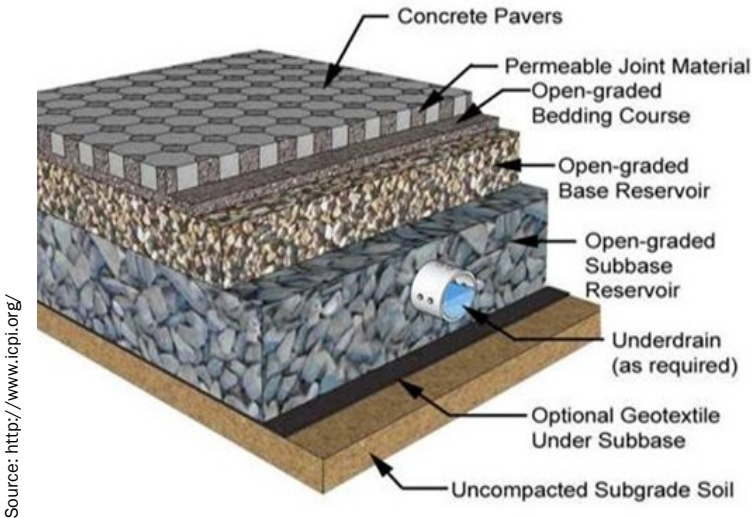


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DESIGN FEATURES



THE INNER LAYERS OF POROUS PAVEMENT

The design was based on the University of New Hampshire's Design Specifications for Porous Asphalt Pavement.

The design includes a graded base made up of layers of open gravel with a stone reservoir designed to store and then infiltrate runoff. An underground drain system to pipe runoff to a catch basin was installed in the event the capacity of the reservoir was exceeded.

The system filters and treats the caught runoff by trapping pollutants in the sub-base layer and then infiltrates the runoff into the groundwater table.

MAINTENANCE

The maintenance for the porous pavement occurs annually each spring. Large debris should be cleared and then a high-powered, air-based, street cleaner vacuums and collects excess sediment and debris that are present on and in the porous pavement layer. This process ensures that the pavement is clear of any materials that might inhibit the pavement from infiltrating stormwater.

It is also very important that sand and abrasives are not used for winter maintenance, because they clog the pores; instead de-icing materials should be used. Porous asphalt slows the formation of ice on the pavement surface, so the use of de-icing compounds may be reduced as compared to a conventional parking lot.



WATER PASSING THROUGH PERVIOUS CONCRETE, ANOTHER FORM OF POROUS PAVEMENT

REFERENCES

"Handy Apartments Porous Asphalt ." *Watershed Consulting Associates, LLC*. 2014. Web. <<http://watershedca.com/project/handy-apartments-porous-asphalt/>>.

"Pervious Concrete Pavement." :: *Pervious Pavement*. National Ready Mixed Concrete Association , 2011. Web. <<http://www.perviouspavement.org/>>.



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