Storm Water Management

Bio Filters
Retention Basins

PERLITE PLANT GUIDE

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Stormwater Management with Perlite and Vermiculite

By Bruce Schundler

Increasingly engineers, landscape architects, and design professionals are seeking ways to comply with Phase II of the National Pollution Discharge Elimination Program (NPDEP), various local, state, and federal requirements of the Water Pollution Control Act, and many state laws and regulations promulgated to control of water pollution and storm water pollution.

For years "point source" pollution and so-called "non-point source" pollution from industrial sites have been carefully regulated and managed, but soon many "non-point sources" from other than industrial sites will have to comply with best management practices for storm water run-off.

A new "water quality swale" along the NJ Parkway

Perlite and vermiculite have been used in a number of storm water management systems and designs.

Because they both can absorb and adsorb a lot of water and because they can also improve drainage capabilities even when holding water, they both have been used when it is desirable to hold back water and give it time to more naturally drain away or be filtered. And because vermiculite has some interesting cation exchange capabilities, it has been used when heavy metals may be polluting storm water and need to be removed before the water is discharge into streams or rivers. For instance, there have been several designs for large parking lots and highways where the storm water is channeled through vermiculite to collect some of these pollutants.

At the end of the swale, cleaner "filtered" water discharges into a stream

In other landscaping/storm water designs, perlite has been added to the soil in "bio-filters" and special retention ponds to both absorb excess water and increase drainage into the natural aquifer.

In still other applications, perlite and vermiculite have been used as filtration media in commercial storm water filtration systems. In these units, the filters and filtration media have to be recharged, cleaned, or replaced from time to time---but still some of the filtration properties of perlite and vermiculite have been used.