



Maryland Society of Professional Engineers

STORMWATER MANAGEMENT TECHNIQUES

Design and Construction of Bioretention Systems



One-Day Workshop for Surveyors, Engineers,
Landscape Architects, Contractors & Regulators

Presented by:

- Maryland Society of Professional Engineers
- MidAtlantic Surveyor Education Institute

- Catonsville Campus, Community College of Baltimore County
- Tuesday, October 7, 2008 – 8:30 a.m - 5 p.m.

Conducted by Michael L. Clar, P.E., President, Ecosite, Inc.

This course is designed for engineers, surveyors, landscape architects, environmental regulators, hydrologists, and construction contractors involved with the design, review, construction, inspection and maintenance of stormwater management practices. The course provides a comprehensive review of all the essential elements related to the planning, design, construction, inspection and maintenance of bioretention facilities for low-impact development.

Bioretention is a terrestrial-based (up-land as opposed to wetland), water quality and water quantity control practice using the chemical, biological and physical properties of plants, microbes and soils for removal of pollutants from storm water runoff.

Learning Objectives

In this course you will be introduced to one of the newest and most exciting stormwater management BMPs. You will learn the following aspect of Bioretention technology:

- The Bioretention Concept (Bioretention as an Element of Low Impact Development, Functions of Bioretention Systems, Sizing Guidelines, Bioretention System Types)
- The Grading Plan (Locating the Bioretention Area, Drainage Considerations, Grading Plan Guidelines)
- Design Methods (Design for Water Quality, Groundwater Recharge, Peak Discharge Control, System Hydraulics, Underdrains)
- Soil and Filter Media Guidelines (Subsoil Considerations, Soil/ Filter Media Guidelines, Mulch layer Guidelines, Plant Growth and Soil Fertility)
- Planting Plan (Planting Plan Concept, Plant Species Selection, Site and Ecological Considerations, Number and Size of Plants, Plant Material layout)
- Construction Techniques (Erosion and Sediment Control Considerations, Timing and Scheduling, Installation)
- Inspection and Maintenance (Inspection Guidelines, Maintenance Guidelines, Soil/Filter Media, Mulch, Plant Materials)

OTHER WORKSHOPS:

Sept 24-25.... Introduction to Stormwater Management

Oct. 30..... Environmental Site Design Planning Techniques and Treatments

MARYLAND SOCIETY OF PROFESSIONAL ENGINEERS

A State Society of the National Society of Professional Engineers

19E Hamill Rd., Balto, MD, 21210, 410-675-8967 ♦ fax 410-522-6957 ♦ e-mail mdspe@comcast.net

Design and Construction of Bioretention Systems

One-Day Workshop for Engineers, Landscape Architects, Surveyors, Contractors & Regulators

- Catonsville Campus, Community College of Baltimore County
- Tuesday, Oct. 7, 2008, 8:30 am – 5 pm

- **Time:** Registration is from 8 am. Morning session 8:30 am – 12 noon. Afternoon session 1 - 5 pm.
 - **Pre-register:** By mail: 19E Hamill Rd., Baltimore, Md 21210 By phone: 410-675-8967
By e-mail: mdspe@comcast.net By fax: 410-522-6947
 - **Walk-in registration:** If space is available, you may register at the door. But if you have not pre-registered, you should confirm that there have been no schedule changes by phone the day before the seminar. 410-675-8967.
 - **Late Fee** will apply if payment is received later than 7 days prior to workshop.
 - **Confirmations:** We do not send confirmations. However, we will contact you if any schedule changes occur.
 - **Cancellation:** We reserve the right to cancel program and refund all fees.
 - **Refund Policy:** We understand your schedule maybe subject to unavoidable changes. We will be happy to honor substitutions. You may receive a full refund if you cancel your registration at least 7 days in advance of the program.
 - **Format:** This seminar will be presented in a live, interactive, lecture-style program.
 - **CEU Certificate** will be awarded by College.
- Maryland Surveyor 8-hour CPC certificate** will be awarded by MASEI, an authorized Maryland CPC Provider.

BIORETENTION WORKSHOP REGISTRATION FORM

MAIL, FAX OR E-MAIL REGISTRATION FORM TO: Maryland Society of Professional Engineers
19E Hamill Rd., Baltimore, Md 21210 | Phone 410-675-8967 | Fax 410-522-6947 | E-mail mdspe@comcast.net

NAME _____ PE [] Other [] _____

JOB TITLE _____

EMPLOYER _____

ADDRESS _____

CITY ST ZIP _____

PHONE _____ FAX _____

EMAIL ADDRESS _____

Member of: [] MDSPE [] MASEI [] ASLA [] MSS-Baltimore [] Other _____

Tuition: Member of sponsoring organization: \$299 Nonmember \$349

*** \$50 discount for additional people from same organization**

Tuition: \$ _____ [] Check enclosed payable to MDSPE

Late fee: \$ 50.00 [] Check is being mailed

Discount: \$ _____ [] Corporate or agency check will cover more than one person

Total: \$ _____

I understand and acknowledge that by providing my name, home/business address, e-mail address, telephone and fax numbers, I hereby consent to receive communications by or on behalf of the sponsoring organizations.