



MDSPE

Design and Construction of Bioretention Systems

May 28 – 8:30 am - 5 pm - One-Day Workshop

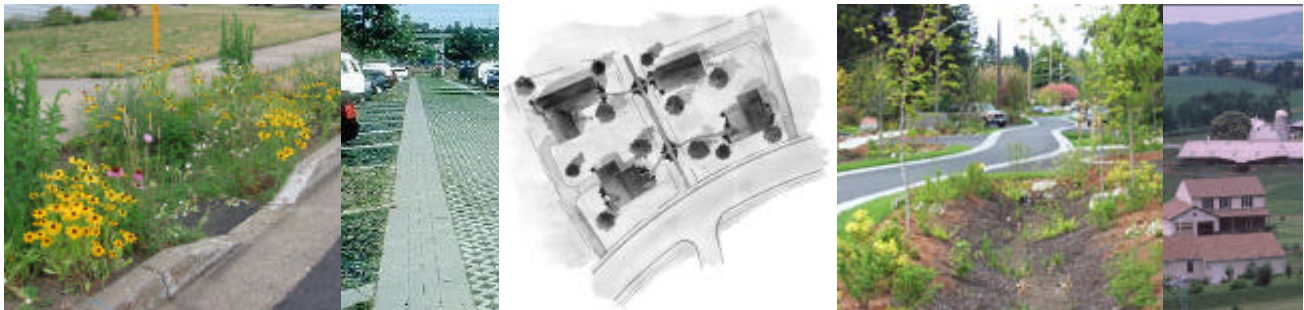


Who should attend? Landscape Architects, Engineers, Surveyors, Contractors, Regulators & Others Interested in Stormwater Management, Environmental Site Design and Low Impact Development

- **Catonsville Campus, Community College of Baltimore County**

Presented by: MARYLAND SOCIETY OF PROFESSIONAL ENGINEERS

Co-sponsored by the Maryland Section, American Society of Landscape Architects



Qualifies for Maryland Surveyor 9 “Category A” Continuing Professional Competency Credits

Qualifies for 9 hours of Virginia Continuing Education Credits for PEs, LSs & LAs

- **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 new MDE Environmental Site Design regulations rate bioretention as a highly-favored micro-practice. This 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)

MAY 28, 2010 BIORETENTION WORKSHOP

Time: Registration is from 8 am. Morning session 8:30 am – 12:30 Afternoon session 1:30 - 5 pm.

- **Pre-register:** By mail: 19 Hamill Rd., Unit E, Baltimore, MD 21210 By phone: 410-675-8967
By e-mail: mdspe@comcast.net By fax: 410-505-1511

Walk-in registration: If space is available, you may register at the door. But if you have not pre-registered, you should confirm by phone the day before the seminar that there are spaces available and that there have been no schedule changes. 410-675-8967.

- **Late Fee** will apply if payment is received later than 7 days prior to workshop.
- **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.
- **CCBC certificate** will be awarded to all participants
- **Maryland Surveyor 9-hour CPC certificate** will be awarded by MASEI, an authorized Maryland CPC Provider.

For information or to register, go to <http://www.mdspe.org/continuing-education-2.htm>

MAY 28, 2010 BIORETENTION WORKSHOP REGISTRATION FORM

MAIL, FAX OR E-MAIL REGISTRATION FORM TO:

Maryland Society of Professional Engineers

19 Hamill Rd., Unit E, Baltimore, MD 21210

Fax 410-505-1511 ~ E-mail mdspe@comcast.net ~ Phone 410-675-8967

- **Tuition: Member of ALSA, MDSPE, NSPE, MASEI, or ASCE** **\$299**
- **Nonmember** **\$399**
- **Late fee for registrations received after May 21, 2010**..... **\$50**
- **Make check payable to MDSPE**

• NAME _____

• JOB TITLE _____

• EMPLOYER _____

• ADDRESS _____

• CITY _____ ST _____ ZIP _____

• PHONE _____ FAX _____

• EMAIL ADDRESS _____

• Member of:

• MASEI

• ASCE

• ALSA

• NSPE

• MDSPE

• Are you an L.S.? yes

• Are you an L.A.? yes

• Are you a P.E.? yes

For more information on MDSPE workshops, go to <http://www.mdspe.org/continuing-education-2.htm>

MORE WORKSHOPS COMING SOON:

June 7~ Environmental Site Design

June 9 ~ TR 55

June 22-23 ~ TR 20