

Road and Site Design & Low Impact Development Design Seminars

26 June 2013 (Wed)
9am – 5pm

Level: Introductory

Seminar Outline: *The following will be covered over two half day seminars. This is a presentation and demonstration session with time for discussion and questions.*

Note: A 1 hour lunch will be taken at about 13:00pm.

Half Day Road and Site Design Seminar

Introduction to XPSITE3D for Road and Site Design

Model Setup and Design tools

- Loading surface data
- Simple road design tools
- Introductory junctions and roundabouts

Interfacing and Earthworks

- Road grading
- Simple earthworks
- Volume calculations

Advanced Design Tools

- Road widenings and editing tools
- Drainage layout tools
- Setting out information
- Exporting data

Discussion and Questions

Half Day Low Impact Development Design Seminar

Introduction to theory of LID

- History of drainage design
- Comparing traditional and LID workflows
- Moving forward with LID for integrated stormwater design

Modeling Low Impact Development (LID) with XPDRAINAGE

Drainage Layout and Design Tools

- Deluge surface to identify flow paths and ponding areas
- Volume estimate calculators

Designing LID systems

- Layout site with contributing areas and drainage systems
- Modeling rain gardens, bioretention areas
- Modeling pervious pavement
- Model swales, infiltration trenches
- Model Inlets and Outlets
- Rainfall data

Resulting design

- Designing to meet flow and water quality criteria
- View flow paths

Discussion and Questions



Flood Modeling Workshop

27 & 28 June 2013 (Thu-Fri)

9am – 5pm

Level: Basic & Intermediate

Course Outline: *The following will be covered over the two day course. This is a hands on training workshop with theory and practical software exercises.*

Note: A 1 hour lunch will be taken at about 13:00pm.

Storm and Flood Modeling and Management (XPSWMM with XP2D)

Introduction

- Graphical User Interface
- File management
- Model control and object creation tools
- Layer control and network management
- Model output review tools
- The user will build a simple network using the tools to get familiarity with XP interface.

Flood flow estimation and hydrological modeling

- Creating design storms (MSMA 2nd Edition) for flood flow prediction
- Loss processes and models
- Flood flow estimation using runoff routing
- Multi storm generation and critical storm identification
- Flood forecasting using continuous flow simulation

Hydraulics of flood flow

- Hydraulics system building using digital terrain models (DTM)
- CAD and aerial images
- GIS integration to create flood modeling entities
- Flooding of open channels

- Culvert and road-overtop flows
- Management of flood flows using hydraulic structures including, ponds, outfalls, RTC, inlets etc

Advanced Storm Water Hydrology

- Rainfall Statistics
- Simulation using continuous rainfall data
- Rainfall Import Options
- Global Storms

Advanced Stormwater Modeling Tools

- Rational hydrology for sizing system
- Tools for determining missing data
- Dual drainage
- Ponding options
- Pond storage and optimization
- Outlet Structures
- Drainage Canals and groundwater

River flood management using 1D/2D hydraulic models

- Creating 1D and 2D domains
- Flow boundaries and 1D/2D integration
- Land use patterns
- 1D river floods and 2D overland floods

Dam break /Levee breach flood management

- Flood levee modeling
- Flood scenario manager with and without flood levee break
- Flood inundation mapping and hazard classification

Q&A (balance of remaining time)

