



CPD points pending
confirmation from BEM.

Design of Drainage System & Flood Modelling in Compliance with the Requirement of DID Urban Stormwater Management Manual for Malaysia (MASMA)

Date: 5-7 Nov 2008 (Wed – Fri)

Organiser:

**Dept. of Civil & Structural Engineering, Universiti Kebangsaan Malaysia (UKM)
&
Lestari Software Enterprise (LSE)**

About the Workshop

This Workshop provides attendees with up-to-date information and techniques for solving and managing Urban & Rural Drainage Design and Analysis projects complying with DID's requirement to control discharge at source, with xpswmm software. The workshop will concentrate on the MASMA requirements pertaining to the design of on-site detention & community ponds plus associated drainage networks. Through hands-on exploration, participants will create their own models for **on-site detention (OSD)** & **community detention ponds** plus surrounding **channel** systems. A brief presentation on **stormwater quality** is included in the workshop. The third day includes an introduction to 2D hydraulic modeling using xp2D - simulation of urban & river flooding. There will be a Question/ Answer session at the end of each day to allow participants to put forward specific queries.

Who Should Attend?

It will benefit all civil engineers in their understanding of MASMA requirements on design of OSD & community ponds plus associated drainage networks which are handled by xpswmm. Participants will advance their modeling skills by applying xpswmm on typical issues such as surface flooding, pond size & level, outlet structures & size, inlet restriction, dual drainage, tidal boundary conditions, etc.

The Trainer

Tony Kuch has been with XP Software for more than 14 years. He has authored several technical papers and instructed over 100 public workshops and in-house training seminars. Tony graduated from the University of Guelph in Canada, where he completed his Masters of Science in Engineering. His MSc. (Eng) thesis was on developing decision support software tools for sensitivity analysis and calibration of SWMM. This will be his **2nd workshop in Malaysia**. He has works with local partners in modeling projects in Malaysia.

Cost per Attendee

Full Payment	By 30 th Sept. 2008	After 30 th Sept. 2008
5 - 7 Nov. 2008 (3 days)	RM 1,350.00	RM 1,490.00
5 - 6 Nov. 2008 (2 days)	RM 1,250.00	RM 1,390.00
7 Nov. 2008 (1 day)	RM 750.00	RM 850.00

Please refer to detail workshop programme overleaf.

Registration fees include professional training, one set of workshop notes, certificate of completion and complimentary trial version of xpswmm plus refreshment & lunch. Computer will be provided to work on the examples during the workshop.

Upon completion of the workshop, attendees will be awarded a **RM300.00** product voucher. This voucher can be used towards the purchase of any new product or add-on module. The voucher will be awarded only to participants attending all 3 days of the workshop.

Venue

Makmal Multimedia, Paras 1, Bangunan Tun Abdullah Mohd Salleh, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor

For More Details Please Contact

LSE: Ms. SY Loke @ 03 – 9010 4368 or 012 306 3510
UKM: Prof. Ir. Dr. Othman A. Karim @ 03 – 8921 6220

How to Register

Simply complete and fax the registration form back to **03 – 9010 4328**
Mail or courier the form with payment to our address
Please make cheque payable to **Lestari Software Enterprise**

Mailing Address

Lestari Software Enterprise
No. 5-2, Jalan Temenggung 5/9, Bdr. Mahkota Cheras, 43200 Cheras, Selangor

Tel: 03 9010 4368 Fax: 03 9010 4328 E mail: syloke@lestarisoftware.com
www.lestarisoftware.com



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Urban Stormwater Management Manual for Malaysia (MASMA)**

Time	Day 1	Contents
09.00	Overview of the Day's Activities and Review of Workshop Material	Introduction to Hydraulic & Hydrology Runoff Calculations Software Localization and Templates - Malaysia Master File (Global Data) Viewing MASMA Temporal Patterns (Chapter 13)* in xpswmm Rainfall Intensity Estimation (Chapter 13)* and input into xpswmm Multiple/Global Storm Infiltration (Chapter 14)* Runoff Routing Method Selection - Time Area Method Reviewing Hydrology Graph Results Design of Drainage System & Community Detention Pond Overview Typical Steps in Setting Catchment Area (Catchment Polygon & GIS Integration) DTM—Embedding a TIN in xpswmm for Automated Elevation Extraction Review of MASMA Approach to Community Detention/Retention Ponds (Chapters 20, 21)* Lunch
13.00		
14.00	Exercise 1 - Detention Pond Design Example	xpswmm Hydrology Layer - Determine Pre and Post Development Flow (Critical Storm) Adding xpswmm Hydraulics for Detailed Analysis of Open & Closed Channels Overland Hydraulics Outlet Sizing (Outlet Pipe/Orifice/Weir) Scenario Manager - Creating Scenarios Detention Facility Optimisation Using Closed Conduit as Storage Inlet Control on Culvert Roadside Drain - Inlet Capacity Outfall Conditions - Backwater, Tidal Boundary Conditions Pit loss/Pressure Change Coefficient (Ku) Size Pond to Meet Downstream Peak Requirements (Chapter 4, 8, 9)* Different Between Under Car Park Storage & Above Ground Storage
17.00	Questions/Answers	Close of Session

*Tentative
Programme*

Time	Day 2	Contents
09.00	Review of 1st Day and Overview of the day's activities	Continue Exercise 2 Results & Report Generation/ Preparation Hydrograph for Multiple Storms (Critical Storm) XP Tables (Customized Report Setting & Full Spreadsheet Function) Viewing Multiple Sets of Results from Scenario Manager Spatial Reports Graphical Encoding Time series Hydrographs & HGL Animations Profile Plot - Export Dxf file
13.00		
14.00		Lunch Review of MASMA Approach to On-Site Detention (OSD) (Chapter 10, 18, 19)* OSD Requirements to Meet Downstream Peak Exercise 2 - OSD Design Example Minor & Major Drainage Systems Multiple Storms Outlet/Orifice Size Estimation Weir/Emergency Spillway OSD Size Estimation Results & Report Generation/ Preparation Hydrograph For Multiple Storms (Critical Storm) XP Tables Brief Presentation on Pollutants Buildup/Washoff & BMP Simulation
17.00	Questions/Answers	Close of Session

Time	Day 3	Contents
08.45	Review of 2nd Day and Overview of the day's activities	xp2D Modeling Theory and Capabilities Description of TUFLOW xp2D Theory and Calculation Method Input Data Requirements and Model Results 1D/2D River Modeling Example Set xp2D Extent and Grid Size Set xp2D Active and InActive Areas using Polygon Tool Set 1D/2D Interface using the Polyline Tool Link 1D River Model to 2D Floodplain with 1D/2D Connections Troubleshoot and Run the Integrated 1D/2D Model Results 1D Results in Link Node Network Grid Cell Depths, Velocity and Flow Vectors Hazard Maps and 2D AVI File Creation
12.30		Lunch
14.15	1D/2D Urban Flooding Example	Inactive Flow Areas, Ridge and Gully Roughness Categories Results 2D Maps 3D Perspective View Defining Output Lines (Flow) and Point (Elevation) Graphs Viewing Output Lines (Flow) and Point (Elevation) Graphs Questions/Answers
17.30		Close of Workshop

* Relevant Chapters in MASMA

Fax the registration form back to **03 - 9010 4328**

Tel: 03 90104368

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Please tick

Name: 1) _____ HP: _____
2) _____ HP: _____
3) _____ HP: _____

Company: _____

Address: _____

Tel: _____ Fax: _____

E mail: _____

Cheque no.: _____ RM: _____

Please make cheque payable to **Lestari Software Enterprise**

The Organiser reserves the right to cancel, alter or change the programme due to unforeseen circumstances. Every effort will be made to inform the registered participants of any changes.