

SPEAKER



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Pre-Conference: A

CONSTRUCTED WETLANDS IN MALAYSIA

Concept, Design and Application
for Sustainable Stormwater
Management



**HRDC
CLAIMABLE
COURSE**



**CPD/PDH
HOURS
PROVIDED**



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01 COURSE SUMMARY



This one-day pre-conference workshop provides a comprehensive understanding of constructed wetlands as a Nature-Based Stormwater Solution (NbSS) for sustainable stormwater management. It covers concepts, design principles, applications in Malaysia, and hands-on design exercises aligned with MSMA requirements.

02 OBJECTIVES



- Understand the role of constructed wetlands as NbSS within sustainable stormwater management frameworks
- Interpret the MSMA water quality control framework in relation to CWS design and implementation
- Identify and differentiate various types of constructed wetlands systems and their applications
- Evaluate design considerations including hydraulics, loading rates, media, and vegetation
- Apply knowledge through hands-on design exercises aligned with MSMA requirements

03 LEARNING OUTCOMES

At the end of the workshop, participants should be able to:



Explain the principles and pollutant removal mechanisms of constructed wetlands



Classify different CWS configurations (e.g., Free Water Surface, Horizontal Subsurface Flow, Vertical Flow) and justify their selection



Select suitable filter media and wetland plant species based on treatment objectives and local conditions



Interpret and apply MSMA guidelines in the design of constructed wetlands



Develop a conceptual and preliminary design of a CWS for a given scenario



Critically evaluate the performance and limitations of constructed wetlands using case study data

04 CONTENTS



Module 1:
Sustainable
Stormwater
Management and
MSMA Framework



Module 2:
Fundamentals of
Constructed Wetlands



Module 3:
Design Considerations
and Engineering
Parameters



Module 4:
Design Procedures
Based on MSMA



**1 SEPTEMBER 2026
8.30 AM – 5.00 PM**

Sunway Putra Hotel, Kuala Lumpur



Register Here to Secure Your Seat:

<https://swam2026.stormwater.org.my/>



TENTATIVE SCHEDULE



1 SEPTEMBER 2026



08:00 AM – 5:00 PM

TIME	SESSION	DETAILS
 08:00 – 08:30 AM	Registration & Welcome Drink	Participant registration and networking
 08:30 – 10:00 AM	Module 1: Sustainable Stormwater Management and MSMA Framework	• Introduction to sustainable development and Nature-Based Stormwater Solutions (NbSS) • Overview of stormwater management challenges in Malaysia • MSMA water quality control framework • Role of BMPs in integrated urban water management
 10:00 – 10:30 AM	Morning Break	
 10:30 – 12:00 PM	Module 2: Fundamentals of Constructed Wetlands	• Introduction to wetlands: natural vs constructed systems • Types of CWS and its Application • Key components of CWS • Pollutant removal mechanisms • Advantages and limitations of CWS • Case studies – Global and Malaysian Applications
 12:00 – 1:00 PM	Module 3: Design Considerations and Engineering Parameters	• Design objectives and performance targets • Hydraulic design • Sizing criteria and flow distribution • Operation and maintenance considerations • Filter media and vegetation selection
 1:00 – 2:00 PM	Lunch	
 2:00 – 3:30 PM	Module 4: Design Procedures Based on MSMA	• Step-by-step design approach • Hands-on session
 3:30 – 4:00 PM	Afternoon Break	
 4:00 – 5:00 PM	Hands-on discussion & presentation	Group photo and certificate session

* Schedule is subject to change.

