ABC Waters Professionals
Core Module CU 3

"Design, Construction and Maintenance of Swales and Buffer Strips"
organized by IES

Date: 13 Jan 2012 (Friday)
Time: 8.30 am – 6.00 pm
Venue: Singapore Management University (SMU)
Seminar Room 5.1 Level 5 @ School of Economics & Social Sciences
90 Stamford Road, Singapore 178903
Fee: $290 - IES member, SIA member, SILA member
$360 - Non-member
CPD: (BOA- 2 CPD approved)
(PEB)/(QECP) - To Be Confirmed
INTRODUCTION

Two-thirds of Singapore functions as local catchment areas. Under the Active, Beautiful, Clean Waters (ABC Waters) Programme, PUB has embarked on a journey to harness the full potential of our waters by integrating them with our environment. Over the past 2 to 3 years, other public agencies and private developers have also embraced the ABC Waters design that leads to improvement in water quality, enhanced biodiversity and new recreational space for people to get closer to water.

With more ABC Waters projects, there is a need to ensure that suitably qualified Engineers/Architects/Landscape Architects are on board to undertake the designs of such water features. IES is collaborating with PUB and other agencies to introduce the ABC Waters Professional Programme. The programme is aimed at building up the expertise in the area of ABC Waters design and increase the competitiveness of professionals in the Singapore market as well as within the region.

The objective of the Programme is to create awareness of ABC Waters design concept and its application in Singapore amongst professionals in the industry and to train professionals in the design, implementation and maintenance of ABC Waters Design features. Four core modules (CU1 to CU 4) and four elective modules (EU 1 to EU 4) are offered under the ABC Waters Professional programme. Core Modules CU1 to CU4 and Elective Modules EU1 to EU4 are conducted from Sep 2011 to second quarter 2012.

Participants who complete all four core modules plus any two elective modules would be eligible to be registered as an ABC Waters Professional. Participants who complete any single module would receive certificate of attendance for the module completed.

It is envisaged that in the near term, the ABC Waters Professional certification may be a requirement for development proposals involving ABC Waters design features.

Supported by:
ABC Waters Professionals
Core Module CU 3

Course Outline for Core Module CU3

Overview of Swale (Ms Tay – 1/2 hour)

Understanding ABC Waters Design features as applied to housing development, parks and streetscape

Overall ABC Waters Design and storm water quality management

Landscape design of Swale (Ms Tay - 1 hour)

Swale in Urbanized landscape

Plant selection and common species used

Engineering Design of Swale (Dr May Chui and Dr S H Chew – 4 hours)

Engineering design consideration – Hydraulic and other considerations
  • Hydrologic and hydraulic design objectives
  • Surface and near-surface hydrology

Vegetation and Soil considerations

Step-by-step Design Process – detailed design consideration and calculation

Construction consideration and Maintenance – (Dr S H Chew – 1/2 hour)

Case Study on Swales and Buffer Strips (Invited Speaker - 1 hour lecture)

MCQ Exam – 1 hour
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Speaker Profile

Er Dr Chew Soon Hoe

Dr Chew Soon Hoe received his PhD from University of California at Berkeley. He is currently an Assistant Professor in the Department of CE, NUS, and also holds the position of Deputy Director of the Centre for Protective Technology, NUS. His research interests include geosynthetics, slope engineering, land reclamation, soil improvement, soil erosion, numerical modeling in geotechnical engineering and geo-environmental engineering. In the past 15 years, he has conducted extensive research on geosynthetics, especially on the reinforcement, filtration and drainage applications of geosynthetics material. His other research interests include survivability of geotextiles, geosynthetics for erosion control, vertical drains testing and applications. He has been very actively promoting the use of geosynthetics in civil engineering construction, and has been engaged as consultant to government agencies and private consultants and contractors on geosynthetics related projects and construction in this region. He is also actively consulted in general area of geotechnical engineering including slope stability, pile foundation and excavation related problem.

Dr May Chui Ting Fong

Dr Chui Ting Fong May is an assistant professor in the Department of Civil and Environmental Engineering at National University of Singapore. She received her PhD in environmental fluid mechanics and hydrology from Stanford University. She has been studying and modeling hydrologic processes such as groundwater surface-water interactions for a number of years. She has also been working in the field of ecohydrology, researching the coupled dynamics between hydrology and vegetation. She is currently investigating the impact of sewer leaks on both subsurface and surface water quality, as well as the feasibility of creating eco-friendly flow regimes in urbanized canals. Her teaching areas include hydraulics, water resources engineering and groundwater hydrology.

Miss Tay Bee Choo

Ms Tay Bee Choo currently heads the Landscape Unit in Housing & Development Board (HDB), which oversees the landscape design in new housing estates as well as estates undergoing upgrading. Amongst her many responsibilities is the pivotal role of guiding the consultants in the design of outdoor spaces and related facilities. She and her team are also responsible for ensuring the greenery in all HDB estates are maintained and all requests for tree felling are accompanied by tree replacements.

Under her leadership, she has helped transformed HDB’s landscape environment. A Landscape Architect by training, she has demonstrated that high rise high density public housing does not necessarily translates into a concrete urban jungle. Rather, the greening of public housing has become her new challenge as HDB looks forward to creating environmentally-friendly and sustainable green homes for people to live, work and play.
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Core Module CU1: Understanding ABC Waters Design Guidelines and Certification – 16 Sep 2011

Duration: 8 hours including lectures, case studies and MCQ exam

Competency Areas
- Understand ABC Waters Management Strategies;
- An overview on planning, design and performance considerations for ABC Waters Management including:
  a. Catchment Elements
  b. Treatment Elements
  c. Collection & Storage Elements
- Understand Safety Considerations, Public Heath & Maintenance
- Understand Multi-disciplinary nature of ABC Waters Management
- ABC Waters Certification Scheme

Core Module CU2: Stormwater Quality Management - Planning and Designing ABC Waters Design features - 6-7 Oct 2011

Duration: 11 hours including lectures, case studies and MCQ exam

Competency Areas
- Appreciate ABC Waters Design
- Understand Storm Water Quality Parameters including the following:
  a. Suspended Solids
  b. Nutrients
  c. Litter
  d. Metals
- Formulate Stormwater Management Strategy
- Appreciate Sizing Stormwater Treatment Systems
- Introduction to Model for Urban Stormwater Improvement Conceptualization (MUSIC)
- Understand ABC Waters Design features including the following:
  a. Sedimentation Basins
  b. Swale/Buffer systems
  c. Bioretention Swales
  d. Bioretention Basins
  e. Cleansing biotopes
  f. Bio-engineering
  g. Constructed Wetlands

Core Module CU3: Design, Construction and Maintenance of Swales and Buffer Strips – 13 Jan 2012

Core Module CU4: Design, Construction and Maintenance of Bioretention Basins and Bioretention Swales – To Commence Q1 2012

Elective Module EU1: Design, Construction and Maintenance of Sedimentation Basins- To Commence Q1 2012

Elective Module EU2: – To Commence Q2 2012
Design, Construction and Maintenance of Cleansing Biotopes and Bio-Engineering
Design Processes and Implementation Techniques

Elective Module EU3: – To Commence Q2 2012
Design, Construction and Maintenance of Constructed Wetlands

Elective Module EU4: Slope Stability and Channel Design – To Commence Q2 2012
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Registration Form

ABC WATERS PROFESSIONALS CORE MODULE CU3
Design, Construction and Maintenance of Swales and Buffer Strips

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         Seminar Room 5.1 Level 5 @ School of Economics & Social Sciences
         90 Stamford Road, Singapore 178903
Fees * : $290.00 (IES/SIA/SILA Members) $360.00 (Non-Members)

Please register online/fax the completed form by 20 Dec 2011 before 3pm to:
Rasheedah Goh- IES Academy 70 Bukit Tinggi Road S(289758) Tel: 6463 9211        Fax: 6463 9468

Participant Details

Name: ___________________________ NRIC: ________________

Company : ______________________ Designation: _________________

Address 1 : ____________________________ (For mailing of invoice and receipt)

Address 2 : ____________________________ (For mailing of Certificate)

Postal Code : ______________________ Sex : Male / Female

Mobile No. : ______________________ Fax : ______________________

Email : ____________________________ (For sending of confirmation email)

Please indicate : □ IES/SIA/SILA members  □ Non-members □ Sponsored by company □ Vegetarian

IES/SIA/SILA M’ship No.: ___________ PEB/BOA No.: ___________ (if applicable)

Contact Person Details (if different from participant)

Name : ___________________________ Designation: _______________

Tel : ___________________________ Fax: ______________________

Email : __________________________

Payment Details

Bank / Cheque No.: ___________ Amount ($): ___________

* All Fees are inclusive of 7 % GST. Cheque should be made payable to: “IES”.

Acceptance of Terms and Conditions for Registrations of IES Academy’s Events
I agree to abide by the Terms and Conditions for Registration of IES Academy’s Events.

Name : __________ Signature: ______________
TERMS & CONDITIONS COURSE REGISTRATION

Registration

Registration can be done either online or by faxing in the registration form.

Any registration, whether on-line or fax will be on a **first-come-first-served basis** and will only be confirmed upon receipt of full payment by The Institution of Engineers, Singapore (IES).

Email and phone registrations will not be accepted.

Closing Date & Payment

The closing date of the event will be 7 days prior to event commencement date. Cheques should be crossed ‘A/C payee only’ and made payable to ‘IES’, with the Date of event, Title of The Event and participants’ name indicated clearly on the back of the cheque, and post to:

IES Academy
70 Bukit Tinggi Road
Singapore 289758

Confirmation of Registration

Confirmation of registration will be given 7 days prior to the commencement date of event via email. If you do not receive the said confirmation email, you are required to contact IESA general admin immediately at 6463 9211 (office).

IESA reserves the right to allow only confirmed and paid registrants to attend the Event.

Withdrawals/Refunds of Fees

Notice of withdrawal must be given in writing to IESA. Policy on refund of course fee is as follows:

- **FULL** refund if we receive your written notice of withdrawal at least 7 days before the commencement of the Event.
- **NO** refund otherwise.

No show of participant would not be accepted as reason for withdrawal/refund.

Replacement is allowed but restricted to once only. Replacement will be allowed only if written notice is received by us at least 3 working days before the commencement of the event. However, when an IES member is replaced by a non-member, the participant has to pay the difference in the relevant fees.

Cancellation/Postponement

Changes in Venue, Dates, Time and Speakers for the Events can occur due to unforeseen circumstances. IESA reserves the full rights to cancel or postpone the Event under such circumstances without prior reasons. Every effort, however, will be made to inform the participants or contact person of any cancellation or postponement.

Fees will be refunded in FULL if any Event is cancelled by IESA.

Enquiries

For further enquiries, please contact IESA general office at Tel: 6463 9211.