ABC Waters Professionals
Core Module CU1

Understanding ABC Waters Design Guidelines and Certification

organized by IES

Date : 29 July 2013 (Monday)
Time : 8.30 am – 6.00 pm
Venue : PUB Water Hub, 80 Toh Guan Road East, Singapore 608575
Fee : $260 - IES member, SIA member, SILA member
      $330 - Non-member
CPD : PDU / PDU (QECP) / BOA – 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.

To build up the expertise of industry professionals in ABC Waters design features, the ABC Waters Professional Programme was launched in Sep 2011. Comprising four core modules and four elective modules, the programme covers the concept, design, implementation and maintenance of ABC Waters design features.

Participants who complete all four core modules plus any two elective modules, and meet the registration criteria of IES/SIA/SILA, would be eligible to be registered as an ABC Waters Professional. Details on the registration criteria can be found at the websites of IES, SIA and SILA. Participants who complete any single module would receive certificate of attendance for the module completed.

In line with the revisions to the Code of Practice on Surface Water Drainage, developers/owners shall engage an ABC Waters Professional to design, oversee the construction of, and develop a maintenance plan for the ABC Waters design features. The developer/owner shall submit the concept design and design calculations, endorsed by the ABC Waters Professional, to PUB as part of their Development Control (DC) submission.

On an annual basis, developers/owners shall also submit a certificate of inspection on ABC Waters design features, endorsed by an ABC Waters Professional, if applicable. The certificate of inspection shall include a declaration on whether the features have been inspected, and are maintained satisfactorily and functioning well.
Course Outline for Core Module CU1

1. ABC Waters Management Strategies  
   (2 hr by Mrs Ong Geok Suat and Mr Yau Wing Ken)
   - ABC Waters Programme;
   - ABC Waters Design Guidelines
     - Understand planning, design and performance considerations for ABC Waters Management including:
       - Catchment Elements
       - Treatment Elements
       - Collection & Storage Elements
     - Considerations on safety, Public Health & Maintenance
     - Understand Multi-disciplinary nature of ABC Waters Management
   - ABC Waters Certification Scheme

2. Integrating ABC Waters Design in Project Planning & Integration of Waterbody design in master planning and architectural concept  
   (2 hr by Mr Owen Wee and Mr Stephen Caffyn)
   - Site Context & Analysis of Existing Site Conditions
   - Integrating ABC Elements into Landscape Planning Strategies
   - ABC Waters elements and their Implementation
   - Opportunities: Activities, Aesthetics, Ecology & Bio-diversity, Access & Crossings, Education

3. Case Studies /site visit  
   (3 hr by Mrs Ong Geok Suat, Mr Yau Wing Ken and Mr Veera)
   - Design consideration of Balam Estate Rain Garden (1.5 hr)
     - Design calculation
     - Soil specification
     - Plant selection
     - Maintenance checklist

4. MCQ Exam – 1 hour

5. Site visit (1.5 hr, including transport time)
ABC Waters Professionals
Core Module CU1

**Speaker Profile**

**Mrs Ong Geok Suat**

Mrs Ong Geok Suat graduated with a Bachelor in Civil Engineering from National University of Singapore. She also obtained a Master of Applied Science in Environmental Engineering from University of Toronto, Canada. She has over 20 years of experience in planning and designing both drainage and used water infrastructure as well as in the operation and management of water reclamation and NEWater facilities. She is currently working in PUB. She is instrumental in the formulation of ABC Waters Design Guidelines, ABC Waters Certification, ABC Waters Professional Programme and pilot testing of ABC Waters Design features. She is currently involved in the implementation of a ABC Waters Precinct in Punggol East C39, monitoring of ABC Waters pilot projects and applied R&D in catchment characterization and bioretention system.

**Mr Yau Wing Ken**

Mr Yau graduated with a Bachelor in Chemical Engineering from National University of Singapore. He works in the ABC Waters Programme Branch in Catchment and Waterways Department, PUB. He has been involved in the implementation of many prominent ABC Waters projects at Alexandra Canal, Rochor Canal and Kallang River@Bishan-Ang Mo Kio Park. He is currently involved in the implementation of a ABC Waters Precinct in Punggol East C39, promoting ABC Waters design concept to public agencies, professionals and developers, and in the ABC Waters Certification scheme.

**Mr Owen Wee**

Owen Wee has been working in the architecture field since graduating and has been involved in a wide range of projects that include a National Park Board East Coast Park Master Planning, public housing, private housing, competition for Fire stations and Lasalle Arts School. He was involved in a number of large scale projects in China, such as, master planning of Shenyang (Su jia Tun), Yanlord GuiYang mixed development etc. He was the contract administrator and as well as design and project architect for most of the projects he was involved in while posted to Shanghai for 2 years.

Owen joined Surbana International Consultants in Nov 2004 and has been working on various projects in Singapore since then. With his vast experience and knowledge in architecture and master planning he has won the SIA GOLD design award 2006 for his involvement in the Marina South Pier as well as BCA's buildability award 2007 and BCA Barrier Free and Accessibility 2008 for his work for the Sengkang public housing project ‘Coris II). His contractual and project delivery knowledge are also important assets that the company has tapped on by setting up the computerized guide for commissioning of buildings.

**Mr Stephen Caffyn**

Stephen Caffyn has over 20 years experience working as a Landscape Architect in private practice in the UK, Hong Kong, and Singapore. Stephen Caffyn is the Principal Landscape Architect of Stephen Caffyn Landscape Design specializing in landscape design, urban design, landscape master planning, environmental impact assessments, garden design and roof garden design.

**Mr Veera Sekaran**

Mr Veera Sekaran is a Botanist, a Horticulturist and an ISA certified Arborist. He also delivers lectures for the Masters in Landscape Architecture (MLA) programme at NUS. He was involved in the development of the landscapes of the Zoo, Night Safari and Changi Airport. Mr. Sekaran was the Assistant Director on NParks. Mr Sekaran is currently the managing director of Greenology Pte Ltd and has also developed the Greenology Vertical Greenery (GVG), a low-cost, efficient and sustainable green wall system. He designed and built the first Rain Garden in Singapore at Balam Estate. Mr Sekaran provides various consultancies in Singapore and to countries such as Africa, Morocco, Pakistan, Malaysia, Vietnam, Indonesia and India in various technical fields in landscapes, environment and urban greening.
ABC Waters Professionals
Core Module CU1

Core Module CU1: Understanding ABC Waters Design Guidelines and Certification – 29 July 2013
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
- Considerations on safety, Public Health & 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 – 29 & 30 Aug (to be confirmed)
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 – (To Be Confirmed)
Duration: 7 hours including lectures and MCQ exam

Competency Areas:
- Understand design considerations for swales
- Able to produce suitable design for swales
- Able to provide construction advice for swales
- Knows the maintenance requirements for swales
- Case Example

Core Module CU4: Design, Construction and Maintenance of Bioretention Basins and Bioretention Swales – (To Be Confirmed)
Duration: 8 hours including lectures and MCQ exam

Competency Areas:
- Understand design considerations for bioretention basins and bioretention swales
- Produce a suitable design for bioretention basins and bioretention swales
- Preparing and testing of soil media
- Sub-soil drainage system
- Plant selection
- Provide construction advice for bioretention basins and bioretention swales
- Appreciate the maintenance requirements for bioretention basins and bioretention swales
- Case example
### Elective Module EU1: Design, Construction and Maintenance of Sedimentation Basins - (To Be Confirmed)

**Duration:** 8 hours including lectures and Case Studies and MCQ exam

**Competency Areas:**
- Understand design considerations for sedimentation basin
- Produce suitable design for sedimentation basin
- Apply construction advice for building sedimentation basin
- Appreciate the maintenance requirements for sedimentation basin
- Case example

---

### Elective Module EU2: Design, Construction and Maintenance of Cleansing Biotopes and Bio-Engineering Techniques - (To Be Confirmed)

**Duration:** 8 hours including lectures and Case Studies and MCQ exam

**Competency Areas:**
- Understand design considerations for Cleansing Biotopes
- Able to produce suitable design for Cleansing Biotopes
- Able to provide construction advice for Cleansing Biotopes
- Knows the maintenance requirements for Cleansing Biotopes
- Case example

**Competency Areas:**
- Understand design process for Bio-Engineering
- Understand design techniques for Bio-Engineering
- Provide construction advice for Bio-Engineering
- Appreciate the maintenance requirements for Bio-Engineering
- Case example

---

### Elective Module EU3: Design, Construction and Maintenance of Constructed Wetlands – (To Be Confirmed)

**Duration:** 8 hours including lectures and Case Studies and MCQ exam

**Competency Areas:**
- Understand design considerations for Constructed Wetlands
- Produce suitable design for Constructed Wetlands
- Plant selection
- Provide construction advice for Constructed Wetlands
- Appreciate the maintenance requirements for Constructed Wetlands
- Case example

---

### Elective Module EU4: Slope Stability and Channel Design – To be confirmed
ABC Waters Professionals
Core Module CU1

Registration Form

ABC Waters Professionals Core Module CU1
Understanding ABC Waters Design Guidelines and Certification

Date : 29 July 2013 (Mon)
Time : 8.30 am – 6.00 pm
Venue : 80 Toh Guan Road East, Singapore 608575
Fees*: $260.00 (IES/SIA/SILA Members) $330.00 (Non-Members)

Please register online/fax the completed form by **17 July 2013 before 3pm** to:
Venus Loh
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)

IES/SIA/SILA members IES/SIA/SILA M'ship No.: PEB/BOA No.: (if applicable)

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

**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: ___________________________
ABC Waters Professionals
Core Module CU1

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.