

PUB, IES and professional bodies launch new initiatives to promote sustainable stormwater management

Handbook on Managing Urban Runoff and ABC Waters Professional Registry offer the industry resource kit and design expertise for effective stormwater management systems

Singapore, 30 May 2013:- PUB, the national water agency and industry bodies – The Institution of Engineers, Singapore (IES), Singapore Institute of Architects (SIA) and Singapore Institute of Landscape Architects (SILA) – jointly launched two initiatives today. Both initiatives are aimed at providing developers and industry professionals with resources in the design and development of effective stormwater management systems.

The first initiative by PUB and IES is the Handbook on Managing Urban Runoff, which gives an overview of Singapore’s holistic approach in stormwater management, and showcases examples of “Source” and Receptor” measures which developers could implement in their projects.

The second initiative by PUB, IES, SIA and SILA is the Active, Beautiful, Clean Waters (ABC Waters) Professional Registry. This Registry will offer developers who wish to incorporate ABC Waters design features in their projects with a pool of experts who are trained and qualified to provide professional advice on the design, implementation and maintenance of such features.

Handbook on Managing Urban Runoff

Jointly developed by PUB and IES, the Handbook on Managing Urban Runoff follows PUB’s recent announcement on the revisions to the Code of Practice on Surface Water Drainage^[1] (COP), and is intended to help developers, architects and engineers better understand the holistic Source-Pathway-Receptor approach to stormwater management and address the technical considerations of the “Source” and “Receptor” measures.

The handbook showcases various concepts and case studies of on-site stormwater management and flood protection practices, as well as ABC Waters design features and structural detention and retention features that can be adopted to slow down

^[1] PUB is revising the Code of Practice on Surface Water Drainage as part of its holistic stormwater management strategy. The changes include a new requirement for developers to implement on-site measures to slow down surface runoff and reduce the peak flow of stormwater into the public drainage system, as well as administrative amendments made to some existing clauses to enhance their implementation. These revisions will take effect from 1 June 2013, with a six-month grace period for the implementation of the new clause on reducing peak flow and endorsement of plans by ABC Waters Professionals. <http://www.pub.gov.sg/mpublications/Pages/PressReleases.aspx?ItemId=368>

surface runoff and reduce the peak flow of stormwater into the public drainage system.

Active, Beautiful, Clean Waters (ABC Waters) Professional Registry

The launch of the ABC Waters Professional Registry follows the introduction of the ABC Waters Professional Programme in September 2011. Organised by IES, and supported by SIA, SILA, National Parks Boards (NParks), Housing Development Board (HDB), Land Transport Authority (LTA) and PUB, the Programme aims to strengthen industry knowledge and capability, and develop a pool of experts in ABC Waters design.

The ABC Waters Professional Programme comprises four core modules and four elective modules. Participants who meet the registration criteria of IES, SIA and SILA, and complete all four core modules and any two elective modules of the ABC Waters Professional Programme are eligible to be registered as an ABC Waters Professional. To date, IES has conducted three runs of the programme with over 220 professionals who have attended at least one module of the Programme. Out of these, 40 participants have completed four core and two elective modules.

An ABC Waters Professional will design, oversee the construction of, and develop a maintenance plan for ABC Waters design features in a development. He will also endorse the concept design, design calculations and detailed design of the ABC Waters design features in a development. On an annual basis he will inspect and endorse a Certificate of Inspection on ABC Waters design features, declaring that the ABC Waters design features have been inspected, and are maintained satisfactorily and functioning well.

“There is tremendous potential for developers to tap on ABC Waters design features to enhance aesthetics of the built environment, ensure that cleaner waters flow to our reservoirs, and slow down surface runoff. Likewise, having appropriate structural systems to manage stormwater is critical to protect the developments and mitigate the effects of any possible floods. It is just as important that these features and systems achieve their intended functions – by ensuring that at the development level, they are properly designed, constructed and maintained. In this respect, I am grateful for the strong support from the professional bodies in developing this registry and handbook. These are invaluable resources that the industry could tap on to create sustainable stormwater management systems,” said Mr Chew Men Leong, Chief Executive, PUB.

“IES is happy to collaborate with PUB to develop the Handbook on Managing Urban Runoff, which will help the industry when implementing elements or features onsite to reduce peak flows. In the long-term, it is hoped that our water resources and water features will benefit from expert attention and be sustainably integrated into our lives for all to enjoy,” said Professor Chou Siaw Kiang, President of IES.

Information on the registered ABC Waters Professionals will be published and updated on the respective websites of IES, SIA and SILA. The Handbook on Managing Urban Runoff is available for download at www.pub.gov.sg

About PUB

PUB is a statutory board under the Ministry of the Environment and Water Resources. It is the water agency that manages Singapore's water supply, water catchment and used water in an integrated way.

About PUB's tagline: Water for All: Conserve, Value, Enjoy

PUB has ensured a diversified and sustainable supply of water for Singapore with the Four National Taps (local catchment water, imported water, NEWater, desalinated water).

To provide water for all, PUB calls on all to play our part to conserve water, keep our water catchments and waterways clean and build a relationship with water so we can enjoy our water resources. If we all play our part, we can have enough water for all our needs – for industry, for living, for life.

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For our latest event photos, visit <http://www.flickr.com/PUBsg>

Download our iPhone app from Apple's App Store: MyWaters

Download our Android app from Google Play: MyWaters

About The Institution of Engineers, Singapore

The Institution of Engineers, Singapore (IES) was formally established on July 1966 as the national society of engineers in Singapore. IES is the premier engineering Institution in Singapore and is called upon by the Government to provide feedback on professional engineering matters.

IES is well represented among the faculty members of the major engineering institutions of higher learning in Singapore. Through close collaboration with the local universities and polytechnics, IES organizes courses, seminars and talks for engineers and IES members to advance the continuous development of engineers.

The Institution maintains close links with professional organizations of engineers regionally and throughout the world. These include organisations in Australia, China, Japan, United Kingdom and the United States. The Institution also represents Singapore in the ASEAN Federation of Engineering Organizations (AFEO) and the Federation of Engineering Institutions of Asia and the Pacific (FEIAP) in promoting goodwill and fellowship among all engineers in ASEAN and the Asia-Pacific region.

Through its Engineering Accreditation Board (EAB), IES obtained full signatory status in the Washington Accord (WA) in June 2006. The entry grants IES the authority to represent Singapore, the first country within the ASEAN region which has obtained full signatory status in the WA, to vet education systems under the WA mutual recognition framework.

ABC Waters Professional Programme

Core Modules

1. Understanding ABC Waters Design Guidelines and Certification
2. Stormwater Quality Management -- Planning and Designing ABC Waters Design Features
3. Design, Construction and Maintenance of Swales and Buffer Strips
4. Design, Construction and Maintenance of Bioretention Basins and Bioretention Swales

Elective Modules

1. Design, Construction and Maintenance of Sedimentation Basins
2. Design, Construction and Maintenance of Cleansing Biotopes & Bioengineering Techniques
3. Design, Construction and Maintenance of Constructed Wetlands
4. Slope Stability and Channel Design

Eligibility Criteria

Participants who wish to be registered as an ABC Waters Professionals would need to fulfil the following criteria set out by the respective Professional Bodies (IES, SIA and SILA):

- a) Possess engineering/architectural/landscape architectural degree from universities recognized by the Professional Engineers Board, Board of Architect or Singapore Institute of Landscape Architects.
- b) Be a member of IES, SIA or SILA
- c) Be a Professional Engineer registered with PEB/ Architect registered with BOA/ Full member of SILA
- d) Completed and passed the examinations for four core modules and two elective modules under the ABC Waters Professional Programme
- e) Payment of application and subscription fee of \$214 (GST included) to IES, SIA or SILA

ABC Waters Programme

The Active, Beautiful, Clean Waters (ABC Waters) programme is a long-term initiative by national water agency PUB to transform Singapore's drains, canals and reservoirs into beautiful streams, rivers and lakes that are well-integrated with the surrounding parks and spaces.

The ABC Waters programme is part of PUB's strategic objective to bring Singaporeans closer to water so that they can better appreciate and cherish this precious resource, and at the same time, create new focal points and recreational spaces for the community to enjoy. These ABC Waters projects will also enhance our quality of living, in line with the vision of transforming Singapore into a 'City of Gardens and Water'.

With two-thirds of Singapore harnessed for water catchment, ABC Waters design features which can help to detain and treat stormwater run-off before it flows into our waterways and reservoirs, will also help to maintain the quality of rainwater harvested.

PUB hopes to encourage the adoption of these sustainable ABC Waters design features on a more widespread basis, by both the public and private sectors. The ABC Waters Design Guidelines was thus launched in 2009 (and revised in 2011) to help build industry capability to design and construct these design features. Through the guidelines, the private and public sectors are encouraged to explore new ways to implement these features and integrate waterways within developments to enhance the environment. In 2010, the ABC Waters Certification was launched to recognise public agencies and private developers who embrace ABC Waters concepts within their developments.

In 2011, the ABC Waters Professional Programme was introduced to build up the expertise of industry professionals – Engineers, Architects and Landscape Architects, in the area of ABC Waters design features¹. The programme, organised by the Institution of Engineers Singapore (IES), and supported by the Singapore Institute of Architects (SIA), Singapore Institute of Landscape Architects (SILA), National Parks Boards (NParks), Housing Development Board (HDB), Land Transport Authority (LTA) and PUB, covers the concept, design, implementation and maintenance of ABC Waters design features.

¹ ABC Waters design features refer to sustainable and natural features that can detain and treat stormwater runoff within developments before the runoff flows into our waterways and reservoirs. They also enhance the aesthetics and biodiversity of the landscape. ABC Waters design features include rain gardens, bioretention swales and wetlands.