Dear CIJC Members Organisations,

PUB has requested for us to share on the **Active, Beautiful, and Clean Waters (ABC Waters) Programme** for the Built Environment industry with our fellow CIJC members.

Do kindly refer to the prepared PDF deck for more information and share with your members if possible.

Should you require further information or clarification on the ABC Waters Programme, you may kindly reach out to my colleague from the Professional Registries, Senior Manager Mr Syed Mubarak in this email loop so you may just reach out to him directly.

Thank you.

Warmest Regards,

Eric Toh

Manager, External Relations

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PUB SINGAPORE'S NATIONAL WATER AGENCY

INTRODUCTION TO THE ABC WATERS PROGRAMME

PREPARED FOR THE REAL ESTATE INDUSTRY

Objectives of Active, Beautiful, Clean Waters Programme

Long-term strategic initiative launched in 2006

- Active, Beautiful, Clean Waters (ABC Waters) Programme aims to meet the following objectives:

  i. To transform our utilitarian drains, canals and reservoirs into vibrant, aesthetically pleasing and clean flowing streams, rivers and lakes

  ii. To bring people closer to the water so that they will appreciate and cherish this precious resource and take ownership

  iii. To create a seamless blue-green network well integrated with the adjacent developments

Active, Beautiful, Clean stand for:

ACTIVE:
Providing new community and recreational spaces

BEAUTIFUL:
Improving the aesthetics of the urban environment

CLEAN:
Improving water quality

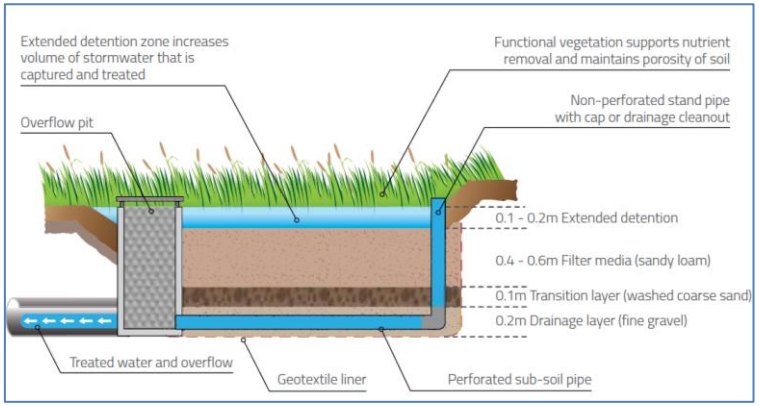
What are ABC Waters Design Features

- Green treatment features using plants and soil media to clean the water through sedimentation, filtration and nutrient uptake

- Help to improve runoff quality, provide some detention of runoff, enhance biodiversity and improve site aesthetics

Types

- Bioretention basin (Rain garden)
- Bioretention swale
- Vegetated swale
- Constructed wetland
- Cleansing biotope



Rain Garden at Kallang MRT/BTOs

Rain Garden at The Woodleigh Residences

Bioretention Swale at Kallang River Potong Pasir

Benefits of ABC Waters Designs

- Enhance biodiversity and aesthetics of development
- Cleanse water through sedimentation, filtration and nutrient uptake with multifunctional landscape & **cleansed water can be collected for rainwater harvesting**
- Can be used to meet/supplement the detention requirements specified in Clause 7.1.5 of Code of Practice on Surface Water Drainage
- Potentially reduces downstream maintenance costs with gravity flow systems vs traditional M&E required to pump water to the public drains from detention tanks
- **Free entry** to biannual ABC Waters Certification Ceremony and Seminar at Singapore International Water Week for **certified projects**

COP on Surface Water Drainage

7.1.5 **Maximum Allowable Peak Runoff**

The following types of developments are required to control the peak runoff discharged from the affected development sites:

(a) New erection and reconstruction works to all developments greater than or equal to 0.2 hectares in size; and

(b) Additions & Alterations (A&A) works to all existing developments where affected area is greater than or equal to 0.2 hectares in size such as:

(i) Addition of new building(s); or

(ii) Extension to existing building(s); or

(iii) Partial reconstruction of existing building(s);

(iv) Any combination of the above

The maximum allowable peak runoff to be discharged to the drains will be calculated based on a runoff coefficient of 0.55, and for design storms with a return period of 10 years and for various storm durations of up to 4 hours (inclusive). Peak runoff reduction can be achieved through the implementation of ABC Waters design features and/or structural detention and retention features, such as:

(i) Detention tanks/drains;
(ii) Retention/sedimentation ponds;
(iii) Wetlands;
(iv) Bioretention swales;
(v) Bioretention basins or rain gardens;
(vi) Porous pavements, etc.

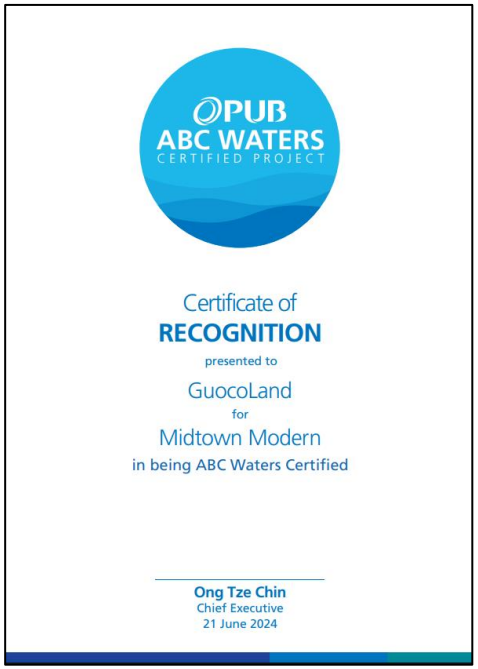
ABC Waters Certification

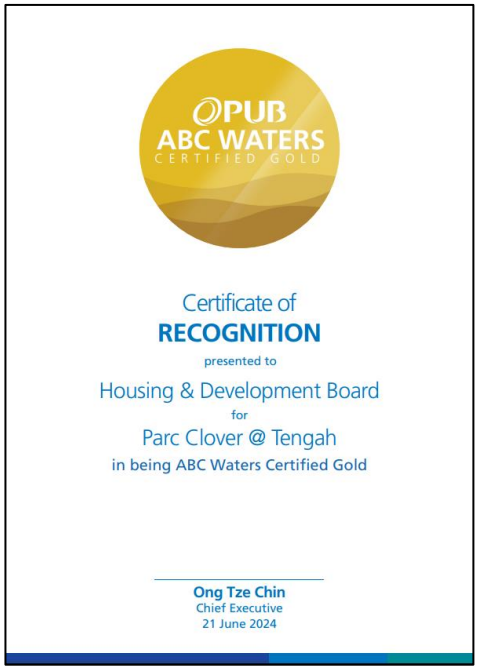
- Introduced in July 2010 to provide recognition to developers who embrace the ABC Waters concept and ensure a minimum design standard

- Assessment criteria based on 4 categories – Active, Beautiful, Clean and Innovation

- As of Sep 2025, there are **173** ABC Waters certified projects
  - ❑ 125 are public agencies
  - ❑ 48 are private developers


The Woodleigh Mall and The Woodleigh Residences





ABC Waters Certification

Assessment Criteria and Points

For a project to achieve ABC Waters Certification, the project needs to attain:

- A minimum of 45 points
- At least 5 points each in the Active, Beautiful and Clean sections

As of 1 August 2017, the certification criteria is updated as follow:

S/N	Sections	Maximum Points
1	Active	30
2	Beautiful	30
3	Clean	30
4	Innovation	10
	Total	100

ABC Waters Certified (Gold)

To achieve Gold Certification, the following criteria must be met:

- Treatment or retention of surface run-off using ABC Waters design features more than or equal to 40% of the total site area
- Obtain a total score of not less than 65 points under the Certification scheme

https://www.pub.gov.sg/Professionals/Awards-and-Certification/ABC-Waters-Certification

Biannual ABC Waters Certification Ceremony and Seminar

- Held in conjunction with Singapore International Water Week (SIWW) located at Marina Bay Sands
- **Award ceremony** to recognize public agencies, private developers and professionals who embrace ABC Waters concepts
- **Seminar** to allow subject matter experts, developers and professionals to share their knowledge and experience on sustainable stormwater management and relevant topics

ABC Waters Seminar 2024

Q&A session

Developers Kajima Development Pte Ltd and Cuscaden Peak Investments Pte Ltd Awarded **Gold Certification** for *The Woodleigh Mall and The Woodleigh Residences*

Award Recipients

What can developers/QP do

Developers

- Champion and incorporate ABC Waters designs features in tender specifications for developments

QP/ABC Waters Professionals

- Identify opportunities for integrating ABC Waters design features, such as rain gardens, bio-retention swales etc. into the overall site layout and landscape design
- Multifunctional use of ABC Waters design features to serve detention, drainage and landscape enhancement

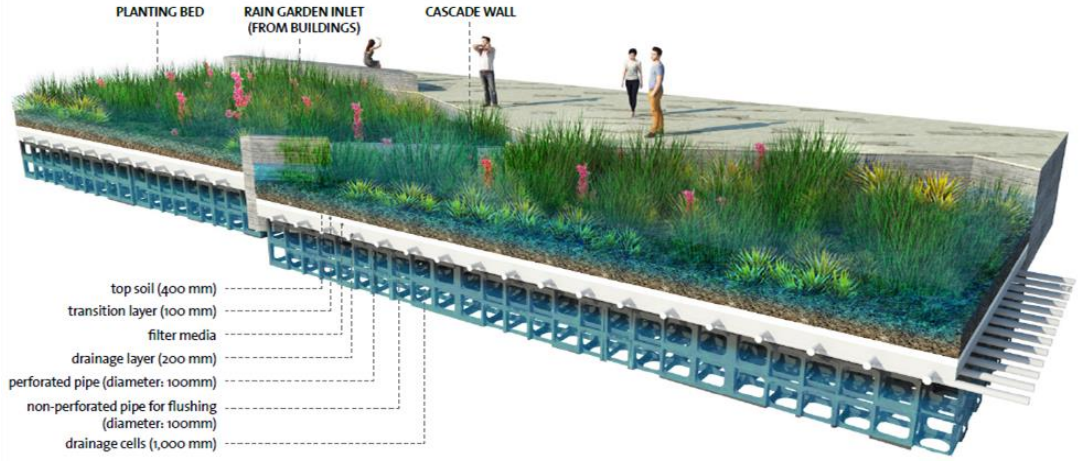
Case Study: Paya Lebar Quarter (Mixed-used Development)

Rain gardens & detention tanks combined

Developer: Lendlease
Applicant: DP Architects Pte Ltd

- PLQ is a 4-hectare mixed-use development comprising of office, residential towers and retail mall

- The development features 3 rain gardens that treat stormwater runoff from **31% of the entire site** and contribute to detain stormwater runoff to meet PUB's source control requirement.
  - No concrete detention tanks were built in the basement in this project
  - **Less operation & maintenance costs as no pumps are required (all discharge via gravity)**



Inflow to rain garden via cascade

Case Study: The Woodleigh Mall and The Woodleigh Residences (Mixed-used Development)

ABC Waters Gold Certified Project

Developer: Kajima Development Pte Ltd and Cuscaden Peak Investments Pte Ltd

Applicant: DP Architects Pte Ltd

- The Woodleigh Mall and The Woodleigh Residences is a 2.5 ha mixed-used development comprising of a shopping mall and private residential flats

- More than 80 rain gardens are well distributed throughout the L3 landscape deck in The Woodleigh Residences, treating surface runoff from **51% of total site area**

Extensive landscape deck

Rain gardens are well-dispersed throughout the residential blocks along the walkways

Case Study: Irwell Hill (Private Residential)

Developer: CDL Perseus Pte Ltd
Applicant: Coherean Pte Ltd

- Irwell Hill Residences is a 1.3 ha private residential condominium
- The development features 3 rain gardens located along the corridor leading to the club pool deck area treats stormwater runoff from **13% of the entire site**
- Intensive green roofs are provided at the residential tower blocks accessible to residents. Vertical greenery is planted on the fence around the tennis court to add to the overall greenery in the development

RAIN GARDEN 1 & 2

RAIN GARDEN 3

Case Study: Midtown Modern (Private Residential)

Rain gardens and vegetated swales

Developer: GuocoLand
Applicant: ADDP Architects LLP

- The Midtown Modern is a residential development with commercial at 1st storey located at Tan Quee Lan Street
- Runoff from 29% of the 1.2 ha site area is conveyed to and treated by 6 rain gardens and 1 vegetated swale
- The landscape design themed 'Gardens in the Woods' adopted the metaphor of an upward exploration into the mountains

Case Study: Shaw Tower (Commercial)

Terraced rain gardens

Developer: Shaw Towers Realty Pte Ltd
Applicant: Ramboll

- Runoff from 24% of the entire site area of 0.6 hectare is treated by terraced rain gardens on level 4 and level 5
- Vertical greenery, sky gardens and sky terraces add to the overall greenery within the development

https://brj.com.sg/new-shaw-tower-achieve-the-bca-green-mark-platinum-super-low-energy-certification-under-latest-2021-criteria/

Building Review Journal

Raising the bar on the future of work

In addition to the BCA Green Mark Platinum (Super Low Energy) accolade, the new Shaw Tower is also:

- The first building under development in Singapore and Asia to achieve the WiredScore Platinum award – the highest rating available – in recognition of its digital connectivity standards as a future-ready workplace supporting tech-centric ways of working.
- Singapore's first high-rise grade A commercial building under development to be pre-certified the International WELL Building Institute (IWBI), targeting WELL v2 Core Gold, boosting the health and wellbeing of tenants and visitors.
- ABC Waters Certified Project by the Public Utilities Board (PUB) for its lush green cascading gardens capping the podium section and the two sky terraces at the top and midpoint of the tower, providing biophilic spaces further enhancing the health and wellbeing of future occupants and visitors.

> "It is not an easy feat to achieve the very first BCA Green Mark Platinum (Super Low Energy) award under the latest 2021 criteria for a new grade A commercial building, along with the other accolades from WiredScore and PUB. We are thankful for the opportunity to co-create high-tech, sustainable and healthy buildings for Singapore," commented Ms Ng Hsueh Ling, Managing Director, Singapore and Chairman, Lendlease Global Commercial Trust Management.

Case Study: SIT Punggol Campus (East Zone)

ABC Waters Gold Certified Project

Developer: Singapore Institute of Technology
Applicant: RSP Architects Planners and Engineers

- Runoff from 40% of the site area is treated by a large cleansing biotope integrated with a sedimentation pond and a rain garden

- The site's detention requirement are fulfilled not only using concrete detention tanks, but also using ABC Waters features:
  - The sedimentation pond functions as a stormwater detention pond
  - The rain garden has an extended drainage layer thickness of 1200 mm which allows it to temporarily detain runoff

Cleansing biotope integrated with detention pond

A walkway located above the rain garden to bring people closer to the feature

Case Study: SIT Punggol Campus (West Zone)

ABC Waters Gold Certified Project

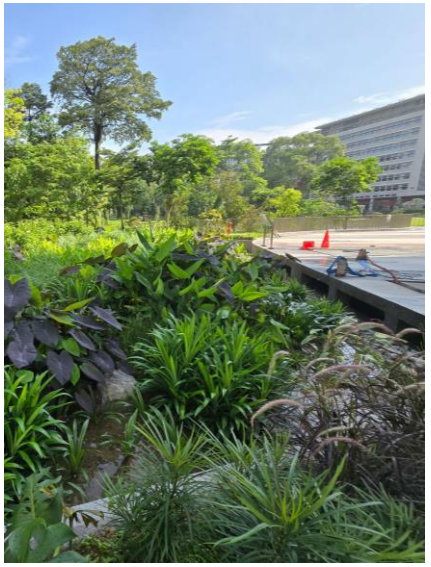
Developer: Singapore Institute of Technology
Applicant: Ramboll

- Runoff from 43% of the site area is treated by 3 rain gardens and a single-tiered cleansing biotope integrated with an eco-pond

- The rain gardens are located at major nodes (drop-off point) and along walkways

Eco-pond



Rain gardens located along major nodes

List of Certified Projects by Private Developers

Year	Batch no.	Project name	Developer
Batch 1 2011	**Batch 1**	Goodwood Residence at Bukit Timah Road	GuocoLand Limited
	Batch 1	City Developments Limited (CDL)	City Developments Limited (CDL)
Batch 2 2012	**Batch 2**	Prive@Punggol Field	HDB / NTUC Choices Home
	Batch 2	Belysa	HDB / Pasir Ris EC Pte Ltd
	Batch 2	H_2O Residences (Sengkang S7)	City Developments Limited (CDL)
	Batch 2	Keppel Club	Keppel Club
	Batch 2	Livia at Pasir Ris Grove	CDL / Hong Realty (Pte) Ltd; Architect 61 Pte Ltd & Tierra Design (s) Pte Ltd
	Batch 2	River Safari Development – Phase 1	Singapore Zoological Gardens
	Batch 2	The Peak@Toa Payoh	HDB / Hoi Hup Sunway Pte Ltd
	Batch 2	Vacanza@ East	Hoi Hup Sunway Pte Ltd
Batch 3 2014	**Batch 3**	D'Leedon	Capitaland
	Batch 3	Eight River Suites	UE Development
	Batch 3	NV Residences	Hong Realty Pte Ltd
	Batch 3	Redevelopment of the Copthorne Orchid Hotel (The Glyndebourne)	City Developments Limited (CDL) (Cicada)
	Batch 3	Sky Habitat	Bishan Residential Development Pte Ltd (Capitaland)
	Batch 3	The Interlace at Gillman Heights	Ankerite Pte Ltd (CapitaLand Residential)
	Batch 3	The Rainforest	City Developments Limited (CDL)
	Batch 3	Tuaspring Desalination Plant (DBOO Hyflux)	Hyflux
	Batch 3	Blossom Residences	Grand Isle Holdings Pte Ltd (Subsidiary of City Developments Limited)

List of Certified Projects by Private Developers

Year	Batch no.	Project name	Developer
Batch 4 2016	Batch 4	Jurong Port	Jurong Port Pte Ltd
	Batch 4	Singapore Sports Hub	Singapore Sports Hub
	Batch 4	NTU Crescent and Pioneer Halls	NTU
	Batch 4	SkyVue	Allamanda Residential Development Pte Ltd
	Batch 4	Yale-NUS College	NUS
	Batch 4	Pasir Ris Parcel 3 (Coco Palms)	City Developments Limited (CDL) & Hong Leong Holdings Limited
	Batch 4	Paya Lebar Quarter	Lendlease
	Batch 4	IES Green Building @ Bukit Tinggi	IES
Batch 5 2018	Batch 5	eCO @ Bedok	Far East Organization, Frasers Centrepoint and Sekisui House Ltd
	Batch 5	iNz Residence	Qingjian Realty (Choa Chu Kang) Pte Ltd
Batch 6 2021	Batch 6	NUS SDE4	NUS
	Batch 6	Marina East Desalination Plant (Gold)	Keppel
	Batch 6	Hundred Palms Residences	Hoi Hup Realty Pte Ltd
	Batch 6	Rivercove Residences	Hoi Hup Realty Pte Ltd & Sunway Developments
	Batch 6	Yunnan Garden (Gold)	NTU
Batch 7 2022	Batch 7	SIT Plot 1 (Gold)	SIT
	Batch 7	The Woodleigh Mall and The Woodleigh Residences (Gold)	Kajima Development Pte Ltd and Cuscaden Peak Investments Pte Ltd
	Batch 7	Forest Woods	CDL Perseus Pte Ltd
	Batch 7	SIT Punggol Campus Plot 2 (Gold)	SIT
	Batch 7	The M	Wingcharm Investment Pte Ltd
	Batch 7	Parc Canberra	Hoi Hup Realty Pte Ltd & Sunway Developments
Batch 8 2024	Batch 8	Shaw Tower	Shaw Towers Realty Pte Ltd
	Batch 8	Midtown Modern	Guocoland
	Batch 8	SJ Campus	Surbana Jurong Capital (JID) Pte Ltd
	Batch 8	Kopar at Newton	CEL Newton Pte Ltd
	Batch 8	Daintree Residence	Setia (Bukit Timah) Pte Ltd
	Batch 8	Irwell Hill	CDL Perseus Pte Ltd

Strong Support from the Industry

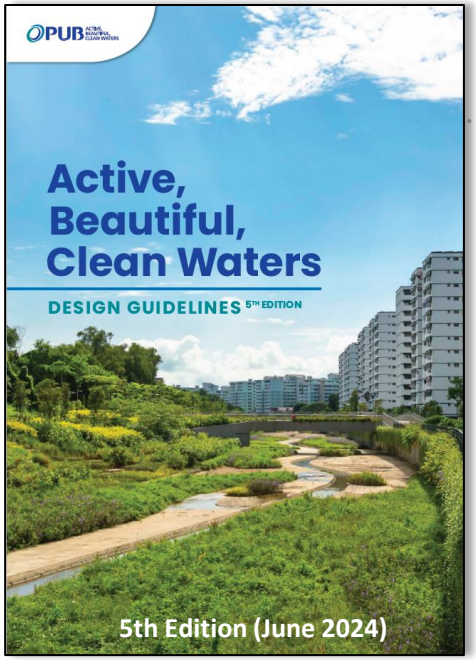
- Representatives from IES, SILA, PUB, NParks, HDB, LTA in **ABC Waters Monitoring and Working Committees**

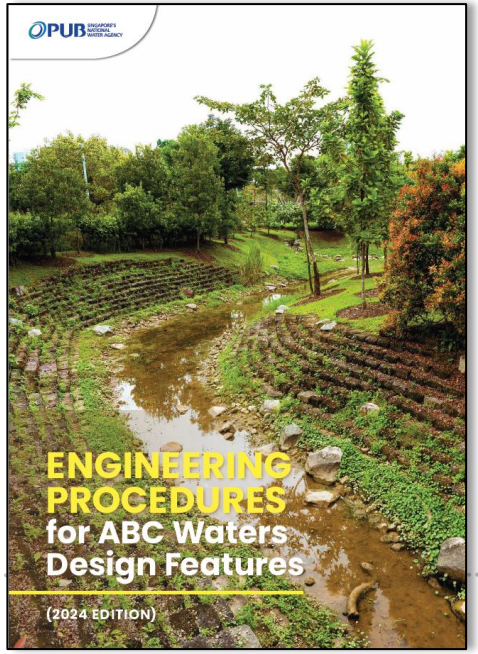
- **227 Certified ABC Waters Professionals** [PE (Civil), SILA, SIA]

- **ABC Waters Design Guide & Engineering Procedures to** guide the ABC Waters Professionals :-
  - ❑ **Design Guidelines** explains the ABC Waters Concept, benefits of ABC Waters design features and illustrate how these features could be integrated with urban landscapes.
  - ❑ **Engineering Procedures for ABC Waters design features** provide detailed information needed for design, construction and O&M.
  - ❑ Can be downloaded from: https://www.pub.gov.sg/Resources/Publications/ABC-Waters

The registry of ABC Waters Professionals can be found below:

- IES Registry
- SILA Registry
- SIA Registry





PUB SINGAPORE'S NATIONAL WATER AGENCY

Thank You