



# Active, Beautiful, Clean Waters Programme



Certified Projects Updated 2023

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# 2014 – 2016 Certified Projects

# 1. SkyParc @ Dawson by Housing & Development Board

A residential development within the Dawson Estate, the precinct is designed to be in a scenic park-like environment with landscaped terraces, and is integrated with the new eco-corridor that would be converted from a section of the existing Margaret Drive. There are a total of five bioretention basins and a bioretention swale in Dawson C5 that detain and treat runoff from 20.1% of the total site area. These features are located along footpath, community spaces, benches and timber boardwalk, as well as the precinct pavilion to enable residents to get close to the ABC Waters design features. Together with the design features, sky gardens on all residential blocks and a rooftop garden at the multi-storey carpark provide recreational and communal spaces for residents, and also contribute to the lush landscape within the precinct.



# 2. Dawson C7 by Housing & Development Board

This residential development showcases two bioretention basins and a vegetated swale that are integrated with the landscape to enhance aesthetics and biodiversity. These ABC Waters design features treat runoff from 11.5% of the total site area. Located near the design features are an adult fitness station, elderly fitness station and playground to allow the residents to appreciate the features while exercising. There is also a precinct pavilion, shelters, covered linkways and footpaths and ramp provided for easy access to the features. The development offers a lush green environment, with green roofs at the precinct pavilion and drop-off porch as well as sky gardens and an accent garden in some of the blocks.



# 2017-2018 Certified Projects

#### 1. Rivervale Shores by Housing & Development Board (Gold Certified)

Located along Serangoon Reservoir, the precinct will be easily accessible by members of the public via park connector and an overhead bridge that links to a park across the precinct. Facilities like the precinct pavilion, an outdoor refreshment area, sheltered walkways, footpaths, decks, fitness facilities, playgrounds and drop-off points will be located near the rain gardens and bioretention lawn to bring people closer to these features.

A comprehensive system of ABC Waters design features comprising rain gardens and a bioretention lawn form part of the precinct landscape. They are designed to integrate with attractive features like fish sculptures, water-wall and staircase with rock gardens. The design features detain and treat rainwater run-off from 51% of the total site area. Aside from the design features, other green features such as intensive/extensive green roofs and sky terraces beautify the precinct. Vertical greenery at E-deck perimeter and columns also add to the lushness of the area.



# 9. SkyResidence @ Dawson by Housing & Development Board

Located in one of Singapore's oldest housing estate, SkyResidence offers a public housing development with an integrated design for Housing, Heritage and Greenery. Community facilities, benches, footpaths and precinct pavilion are designed to be either close to or overlooking the two bioretention basins in the precinct. The facilities serve to bring residents and visitors closer to the ABC Waters design features, which detain and treat rainwater runoff from about 8% of the total site area. The precinct also incorporates a "Green Ribbon", which is a lushly planted landscape deck connecting all blocks. Green roofs at multi-storey carparks, hawker centre and branch office enhance the aesthetics and biodiversity in the precinct. Sky terraces, vertical planters and climbers also add to the façade greenery.



# 2019 – 2021 Certified Projects

# 1. [Gold Certified] Jurong Lake Gardens, Lakeside Garden by National Parks Board

Lakeside Garden revolves around the themes of nature, play and the community. The extensive water frontage within Jurong Lake Gardens create spaces for the community to enjoy nature while having fun. There are scenic boardwalks, water playground, viewing decks, promenade plaza, bird hides and a park connector to bring people closer to water. Round Island Route (RIR) within Lakeside Garden serves as a main link between north to south.

Runoff from 86% of the entire site area is conveyed and treated via vegetated swales, gravel swales and a 3-tiered cleansing biotope before it is channelled to Jurong Lake. Water treated by the cleansing biotope was further treated and used in the water playground.



# 2. [Gold Certified] Keppel Marina East Desalination Plant by Marina East Water Ptd Ltd

The Marina East Desalination Plant, designed to be able to treat either seawater or reservoir water to produce potable water, is the first industrial plant with extensive green and water features that are opened to public access. The project has an integrated sustainable stormwater management system, where stormwater runoff from the extensive green roof (equivalent to 65% of the total site area) flows into bioretention basins and later collects in a rainwater harvesting pond. The water collected is recycled in water features and used for irrigation.

It is a site for visitors of the nearby park with its large lawn area on green roof and cascading water features that circulates water from the rainwater harvesting pond. Formal seating and walkway are provided along the bioretention basins on the green roof also bring people closer to the features.



#### 3. [Gold Certified] Yunnan Garden at NTU by Office of Development & Facilities Management, Nanyang Technological University

The Yunnan Garden is a scenic park in the middle of NTU which adopted a water sensitive or ABC Waters design approach in its design. Sedimentation basin and living stream of wetlands filled with rich flora and fauna were incorporated to solve the high-water table and ponding issue. Rain gardens and cleansing biotopes were also incorporated to treat the runoff from pedestrian promenade and Nanyang Lake respectively prior to releasing the water back to the open canal.

An extensive array of elevated boardwalks integrated with ABC Waters design features enable visitors to get close to the water features at various elevations. Walkway promenade and pavilions, look-out/resting decks were strategically located to enhance visitors' experience.



# 4. Alkaff Vista by the Housing & Development Board

The public housing development at Bidadari Park Drive comprises of residential buildings and common green with roof terrace gardens at 2 of the blocks and a roof garden at the Multi-Storey Car Park (MSCP). With the implementation of ABC Waters design features, runoff from 19.4% of the entire site area is channelled to the rain gardens and vegetated swale for treatment.

Extensive green roof on top of the MSCP and vertical greenery with climbers provided at the trellis/shelters in common green and MSCP add to the lushness of the area and enhance the living environment of the residents. Linkway, shelters with seats, fitness area, playground and bicycle parking are located near to the ABC Waters design features that brings residents and visitors closer to the features.



# 5. Clementi NorthArc by the Housing & Development Board

The public housing development comprising of residential buildings with e-deck is located next to the park connector along Sungei Ulu Pandan.

Detention and treatment of runoff from 11.5% of the total site area by bioretention basins. Rainwater feature, multi-purpose court, badminton court, paved gathering space and walkway are located near the bioretention basins to bring people closer to the features. In addition, roof gardens, extensive green roofs and e-decks beautify the precinct and allow people to enjoy the greenery.



# 6. Hundred Palms Residences by Hoi Hup Hougang Development Pte Ltd

Hundred Palms is an Executive Condominium at Yio Chu Kang area with 9 blocks of 15-storey residential units with ancillary facilities and greenery integrated with ABC Waters design features.

Detention and treatment of runoff from 6.7% of the total site area is treated by the ABC Waters design features. Bioretention basins form part of the development landscape. Timber boardwalk, pavilions, yoga decks and reflexology path are located near the bioretention basins to bring people closer to the features. Green walls at multi-purpose recreational court, drop-off and driveway planters beautify the precinct with 50% of the plants used being native species.



# 7. JTC Woodlands North Coast (1 North Coast) by JTC

This project is a light industrial development at North Coast Avenue with basement carpark, shops, restaurants, and offices.

Runoff from 12.3% of the entire site area will be channelled to rain gardens for treatment. To bring people closer to the ABC Waters design features, there is a boardwalk and seating areas. Façade planting, sky gardens/terrace and roof garden are also provided to beautify the precinct. 24.6% of all plant species used in the whole development are species native to Singapore.



# 8. JTC Woodlands North Coast (7 North Coast) by JTC

This project is a light industrial development at North Coast Avenue with basement carpark, shops, restaurants, and offices.

Runoff from 12.3% of the entire site area will be channelled to rain gardens for treatment. To bring people closer to the ABC Waters design features, there is a boardwalk and seating areas. Façade planting, sky gardens/terrace and roof garden are also provided to beautify the precinct. 24.6% of all plant species used in the whole development are species native to Singapore.



# 9. Jurong West Jewel by the Housing & Development Board

Jurong West Jewel is a public housing development comprising of residential buildings, Multi-Storey Car Park (MSCP), intensive green roof on top of MSCP and extensive green roof on one of the blocks to beautify the precinct. Vertical greeneries at the façade of MSCP add to the lushness of the area.

Fitness area, play area, walkway and seating facilities are provided around the ABC Waters design features to bring people closer to the features. MSCP also provides a vantage point for the ABC Waters design features. Runoff from 30.2% of the entire site area will be channelled to the rain garden and vegetated swales for treatment.



# 10. Matilda Sundeck by the Housing & Development Board

Matilda Sundeck is a public housing development project comprising of residential buildings, carpark with Precinct Pavilion and Social Communal Facilities).

Rain gardens are located in the vicinity of Residents Committee Centre, Precinct Pavilion and pedestrian footpath where residents and visitors can enjoy the community spaces and a get a closer view of the feature. Lush roof garden with amenities provides communal space and environmental benefits. Green terraces also add to the liveability of the precinct.



# 11. NUS SDE4 by National University of Singapore

The SDE4 is a new building for the School of Design and Environment in NUS to serve as the hub for integrating education, from design to implementation. Bioretention basins, arranged in series and anchored at each end by 2 feature ponds, have sizable plaza spaces with seats around them that brings students and visitors closer to the features. Terrace garden enhances the visual experience and climbing plants in planter boxes droop down along the green alley add to the lush view.

Treatment of runoff from 21.2% of the total site area by bioretention basins and 2 ponds. 45.5% of the plants used in the development are native species. Educational signage at different locations are provided to promote greater awareness of the bioretention basins. Innovative features include drip irrigation system for water conservation, special inlet structure to the rain gardens breaking the momentum of incoming water while creating an interesting water feature.



# 12. Rivercove Residences by Hoi Hup Sunway Sengkang Pte Ltd

Rivercove Residences is an executive condominium at Anchorvale Lane. The project, sited along Sungei Punggol, sits at a cove of the river and is adjacent to the park connector. Rain gardens, lushly planted shrubs and greenery are located around the e-deck boundary. Planters around water features and pools increase biodiversity in the vicinity. Green roof at bin centre, gym and clubhouse and creepers around edge of e-deck also beautify the development.

51% of all the plant species used in the development are native species. Activity lawn, gourmet pavilion, kid's playground, gardener's pavilion, community garden and hydrotherapy pool are located near to the rain gardens to bring people closer to the features. The project treats runoff from 5.7% of the total site area by rain gardens.



#### 13. SkyOasis @ Dawson by the Housing & Development Board

This public housing development comprises of residential buildings, Multi-Storey Car Park (MSCP), shops, mini-mart, community facilities, eating house, and Precinct Pavilions. ABC Waters design features treat runoff from 4.5% of the total site area. Precinct Pavilion boardwalk and seats bring residents and visitors closer to the bioretention basin located within the precinct. Direct link to Alexandra Canal Park Connector also facilitates people to get closer to the canal. Extensive green roof at Precinct Pavilion and sky terraces at 14th and 35th storeys beautify the precinct. Roof gardens at MSCP and Future Social Communal Facilities (FSCF) as well as vertical green at MSCP allow people to enjoy the greenery.



# 14. Waterway View by the Housing & Development Board

Waterway View is a public housing development comprising of residential buildings, Multi-Storey Car Park (MSCP), Precinct Pavilion and Communal Facilities. Precinct Pavilions, playgrounds/fitness stations and footpath are located close to the ABC Waters design features. Intensive roof garden spaces are provided at the residential blocks and MSCP.

Treatment of runoff from 17.4% of the total site area by bioretention swales and vegetated swales while 19.7% of all the plant species used in the whole development are native species.



# 15. Yusof Ishak Secondary School by Ministry of Education

Yusof Ishak Secondary School is an education institution that consists of a classroom block, Multi-Purpose Hall (MPH) block and an admin and canteen block. Extensive and lush bioretention basin (planted with 6 plants species) enhances biodiversity by providing habitats for butterflies and dragonflies. Educational signages are provided for students to learn more about the bioretention basin and plants species that are planted in the feature. Seating

space on steps are provided along 4 sides of the bioretention basin while football field, jogging track and canteen are located near to it to bring student and staff closer to the feature.

In this project, treatment of runoff from 13.4% of the entire site area by the bioretention basin. Rainwater harvesting tanks with drip irrigation system are used for water conservation.



# 2022 – 2023 Certified Projects

# 1. [Gold Certified] SIT Campus @ Punggol North (West Zone)

The Singapore Institute of Technology (SIT) is designed to be a "Campus- inthe park". Extensive green and blue features within the West zone campus are open to public access.

Treatment runoff from 43.1% of the entire site is treated by a cleansing biotope and rain gardens. Water from the rain gardens is harvested and used for irrigation purposes, while water from the cleansing biotope is recirculated through an eco-pond that creates more blue spaces and beautifies the campus.

ABC Waters design features are seamlessly integrated within the lush greenery in the campus. A garden courtyard and sky garden are provided to beautify the environment and enhance visitor experience. Elevated boardwalks and seats are provided to allow visitors to get close to the ABC Waters design features. 37% of plant species used in the whole development will be native species. Innovative features include drip irrigation system for water conservation.



# 2. [Gold Certified] SIT Campus @ Punggol North (East Zone)

The Singapore Institute of Technology (SIT) Campus is a new smart campus. The first of its kind, SIT is designed to be a "Campus-in-the-Park", aptly complementing the campus' location by the Punggol Waterway park and Serangoon Reservoir. The East zone campus will be home to administration buildings and indoor sports facilities.

Treatment runoff from 40.1% of the entire site area by rain garden, cleansing biotopes and a sedimentation pond. Drains along the main pedestrian are naturalized to channel runoff and enhance the overall landscape. ABC Waters design features will be seamlessly integrated within the lush greenery in the campus. Pedestrian bridge, boardwalk, viewing deck and seats allow the visitors to get close to the ABC Waters design features. 55% of plant species used in the whole development are native species. Innovative features include drip irrigation system for water conservation.



# 3. [Gold Certified] The Woodleigh Residences and The Woodleigh Mall

The Woodleigh Residences and The Woodleigh Mall is a mixed-use commercial and residential development located in the new Bidadari Town. Lush greenery is integrated with the communal and lifestyle facilities to create a tranquil urban oasis.

Treatment runoff from 50.5% of the entire site area by rain gardens spread across the developments. More than 80 rain gardens are provided throughout the development. Rain gardens are distributed across the development and located next to facilities like pool desks, yoga pavilion and playgrounds and BBQ pits to allow the residents to get close to features. 23% of plant species used in the whole development are native species. Innovative fast flow siphonic roof drainage system and drip irrigation are used in the development.



# 4. Alkaff Oasis

Alkaff Oasis is a public housing development located at the junction of Bidadari Park Drive and Alkaff Crescent. The development consists of residential buildings, roof gardens at two multi-storey carparks (MSCP) and a linear greenery between the MSCPs.

Treatment runoff from 10.7% of the entire site area is treated by rain gardens. The rain gardens form part of the development landscape. Seats are provided near the rain gardens to bring the residents and visitor closer to the ABC Waters features. Roof gardens, linear greenery between the MSCPs, façade planting, and extensive green roofs on the

pavilion and covered linkway are provided to beautify the precinct. 28% of plant species used in the whole development are native species Innovative Soilless GaiaMat<sup>™</sup> system is used in the extensive green roof and drip irrigation system is used to conserve water.



# 5. Forest Woods

Forest Woods is a private residential development located at Lorong Liew Lian with a commitment to sustainable architecture. Runoff from 11.1% of the entire site area is treated by 3 rain gardens. Footpaths, BBQ pavilions and alfresco lounge, located next to the rain gardens, bring residents and visitors close to the ABC Waters design features.

A Bio-Pond is provided to create more blue spaces to encourage residents and visitors to come closer to the water. Vertical greenery at the landscape wall, sensory gardens with a variety of flowers add to the overall greenery and enhance the aesthetic within the development. 37.5% of plant species used in the whole development are native species.



#### 6. Kallang Breeze

Kallang Breeze is a public housing development that consists of residential buildings and a roof garden at the multi-storey carpark (MSCP).

Runoff from 27% of the entire site area will be treated by rain gardens. A roof garden and vertical greenery façade planters will be provided at the multi-story carpark block add to the overall greenery within the development. 21.5% of plant species used in the whole development will be native species. Drip irrigation system will be provided to reduce water consumption.



# 7. Keat Hong Verge

At Keat Hong Verge, 6 rain gardens located near the main entrance, drop off point, fitness areas and playground will be built to treat rainwater runoff from about 27 % of the site area. This project also has Auto-drip irrigation systems to promote infiltration of stormwater runoff. Extensive green coverage with green roofs, sky gardens and façade planters also made its way into this development. Educational signage helps people to understand the functions of the rain garden, and provides information on plant species and biodiversity brought about by the rain garden.



#### 8. Kim Keat Beacon

Kim Keat Beacon is designed with extensive ABC Waters design features like bioretention basins and vegetated swales integrated with the landscape areas within the precinct. The features detain and treat rainwater runoff from about 27% of the precinct area. In addition, there will be an extensive use of 25% native plants which will help to create a natural habitat.

There is also a rooftop garden at the multi-storey carpark which improves its aesthetic appearance and lowers its interior temperature. Innovative features such as submerged type rain gardens with carbon source are also integrated for better nitrogen removal.



# 9. Parc Canberra

Parc Canberra is an Executive Condominium development located at Sembawang Link. Runoff from 12.1% of the entire site area will be treated by rain gardens in the development. A pavilion and community garden will be located next to the rain gardens to bring residents and visitor close to the ABC Waters features. 32% of plant species used in the whole development will be native species. Drip irrigation system will be provided to reduce water consumption.



# 10. Tampines GreenGlade

At Tampines GreenGlade, people can enjoy walking at open plaza and aromatic gardens, which runs close to the ABC Waters design features. An abundance of plant species will enrich the lushness of the place and create a habitat for birds and butterflies.

Besides its visual appeal, vegetated swales at selected areas direct rainwater runoff downstream into the canal through overland flows and mild slopes. Together, the vegetated swales and bioretention swales treat rainwater run-off from about 18.7% of the site area. A nearby multi-story carpark will feature roof garden will slow down some runoff, add to its aesthetic appearance, as well as lower the interior temperature. In addition, rainwater from the rooftops and open drain are diverted to the rainwater harvesting tank to be used for auto-drip irrigation.

# 11.The M

Waterfront II @ Northshore (Punggol) is a public housing development along the seafront and next to the Punggol Park Connector Network. The development consists of residential buildings and a landscaped pond (Dragonfly Pond) within the common green. Runoff from 11.2% of the entire site area is conveyed to and treated by bioretention swales and rain garden.



# 12. Toa Payoh Ridge

The public housing development, Toa Payoh Ridge, consists of residential buildings and a multi-story carpark with green roof. Runoff from 35.3% of the entire site area will be conveyed to and treated by rain gardens and bioretention swales. Playgrounds, outdoor fitness area, mini plaza, shelters and footpaths located near to the ABC Waters design features bring residents and visitors closer to the features.

Gravel swales will be used in lieu of traditional concrete drains to convey rainwater runoff and add to the overall greenery within the development. 22.1% of plant species used in the whole development will be native species.



#### 13.Ubi Grove

Ubi Grove is a public housing development comprising of residential buildings, MSCP, communal facilities, playgrounds/fitness stations and footpath are located close to the ABC Waters design features. Intensive roof garden spaces are provided at the residential blocks and MSCP.

Treatment of runoff from 13% of the total site area by rain gardens while 45% of all the plant species used in the whole development are native species. Educational signages around the development inform people ABC Waters design features at Ubi Groove.



#### 14. Waterfront I @ Northshore

Waterfront I @ Northshore (Punggol) is a public housing development along the seafront and next to the Punggol Park Connector Network. The development consists of residential buildings, eco-pond within the common green next to the development. Runoff from 10.9% of the entire site area is conveyed to and treated by bioretention swales, vegetated swales and rain garden.

Footpaths, a birdwatch plaza, fitness corners and playground are provided to bring the residents and visitors closer to the ABC Waters design features. Vertical greenery, sky gardens, green roofs at Childcare Centre and Active Aging Hub add to the overall greenery within the development. 29.3% of plant species used in the whole development are native species.



# 15. Waterfront II @ Northshore

Waterfront II @ Northshore (Punggol) is a public housing development along the seafront and next to the Punggol Park Connector Network. The development consists of residential buildings and a landscaped pond (Dragonfly Pond) within the common green. Runoff from 11.2% of the entire site area is conveyed to and treated by bioretention swales and rain garden.

Part of the water from the ABC Waters design features is channeled into the Dragonfly Pond to create more blue spaces for the residents and visitors. Pedestrian pathways are provided to bring the residents and visitors close to the ABC Waters design features. Vertical greenery, sky gardens, green roof at Electrical Sub-station and Education Centre add to the overall greenery within the development. 29.8% of plant species used in the whole development are native species.



#### 16. West Scape @ Bukit Batok

West Scape @ Bukit Batok is a public housing development that consists of residential buildings and a Biodiversity Corridor" within the precinct to bring residents closer to nature. Runoff from 15.3% of the entire site area will be conveyed to and treated by bioretention swales, vegetated swales and rain gardens.

A biodiversity corridor within the precinct, roof Garden and façade planting at multi-story carpark add the overall greenery within the development. 28% of plant species used in the whole development will be native species.



# 17. Woodleigh Glen

A series of 32 rain gardens and 7 vegetated swales located both at-grade and on the elevated landscape deck, near timber deck, footpaths, shelters, precinct pavilions and seating areas detain and treat stormwater runoff from 11% of the site area through vegetation and soil

The landscape decks provides a venue for residents to soak in nature. Walkways at the communal landscape deck lead residents along the greenery. Green roofs and sky gardens naturally cool and beautify the environment while providing recreational spaces for people to enjoy. The landscape features plants which attract birds and are suitable for the creation of habitat. Educational signages around the development inform people about Bioretention System at the estate.

