



Officially opened on 17 March 2012, the project is the first of its kind in Singapore to transform a concrete 2.7km canal (Kallang River) into a 3km long sinuous, natural river, with bio-engineered river edges using a variety of plants and bedding materials. This method helps stabilise the slope to prevent soil erosion, and form natural habitats that enrich the park's biodiversity. Design features such as a cleansing biotope also helps to treat water from the river and ponds in the park. The cleansed water is then returned to the ponds, eventually cascading back to the river. Designed based on a flood plain concept, park users can enjoy recreational activities along the river banks during dry weather where water flow is confined to a narrow stream in the middle of the river. During heavy rain, the park land next to the river doubles up as a conveyance channel, carrying the rainwater downstream to Marina Reservoir. This enables multiple land uses within the park and creates more spaces for the community.

Today, as the rejuvenated river brings the community closer to water at Bishan-Ang Mo Kio Park, it continues to fulfil a greater mission of fostering a sense of communal ownership and appreciation of this precious resource.

About the Project

A lush, meandering waterway now flows right at the doorsteps of Bishan and Ang Mo Kio residents. Carried out in tandem with the rejuvenation of Bishan-Ang Mo Kio Park, what used to be a utilitarian, concrete canal has been transformed into a beautiful, natural river teeming with life. There are also new and improved facilities, turning the river and park into a vibrant community space.

This project is a joint collaboration between the National Parks Board (NParks) and national water agency PUB under the Active, Beautiful, Clean Waters (ABC Waters) Programme, a long-term initiative to beautify Singapore's waterscape.

A naturalised, meandering waterway right at the doorsteps, a vibrant community space teeming with life, a haven for biodiversity – this is Kallang River @ Bishan-Ang Mo Kio Park, the flagship project of PUB's ABC Waters Programme.



Recreation and Relaxation

One of the largest urban parks in central Singapore, Bishan-Ang Mo Kio Park is a great place for families to have a fun day out. Park facilities includes playgrounds, dog runs, open lawns, restaurants, community and allotment gardens, therapeutic garden, and tracks for cycling or jogging.



Building playgrounds for all

Bishan-Ang Mo Kio Park features a diversity of playground themes to engage children of various age groups and abilities.

The Water Playground stimulates sensory play with treated water from the Cleansing Biotope; the Inclusive Playground is an all-access play facility with wheelchair-accessible features; and the Adventure Playground has a naturalistic design to encourage imagination and exploratory play.

The Water Playground uses recycled water from the pond; the Adventure Playground invites slightly older children to climb and explore while the Bubble Playground has been upgraded to an inclusive Playground where children of different abilities can play together.

Soil Bio-engineering Techniques

Soil bio-engineering techniques involve a combination of natural materials such as rocks and vegetation, and civil engineering techniques to stabilise the river banks and protect them from erosion.

The highlight of this project is the revitalisation of the river. A first in the tropics, soil bio-engineering techniques (a combination of vegetation, natural materials and civil engineering techniques) have been used to stabilise the river banks to prevent erosion.

As soil bio-engineering is largely untested in the tropics and South East Asia, a 60m long test bed was used to refine the selection of appropriate techniques and plants, as well as the most efficient and effective construction methods. Seven of these techniques and a selection of locally available plants that passed the rigorous tests were selected. Now, the changing waterscape creates multiple land uses in the park. When the water level in the river is low, users can get closer to the water and enjoy recreational activities along the river banks. During a downpour, the river doubles up as a conveyance channel, carrying rainwater downstream.

The Flood Plain Concept

The naturalised river was designed based on a flood plain concept, where water flow would be confined to a narrow stream in the middle of the river on dry weather days. The river banks are gently sloped so park visitors can get closer to water. When it rains, water level in the river will rise and the park land that is next to the river doubles up as a conveyance channel, carrying the flow downstream. This helps in catering for the increased rainwater runoff from the surroundings due to increased urbanization of the area.

Examples of techniques used

- Test bed

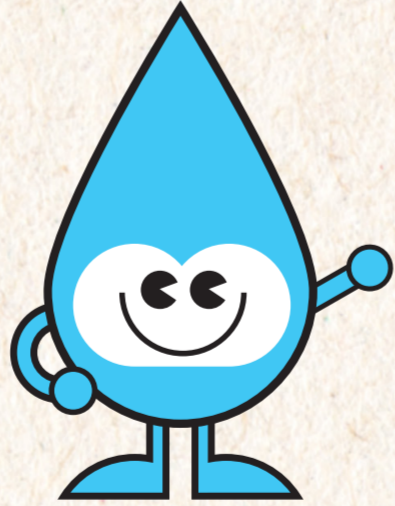
A testbed was constructed in 2009, prior to the commencement of the project, to test out 10 techniques. Following this, 7 most appropriate techniques were then applied along the main river at Bishan-Ang Mo Kio Park. These include rip-rap with cuttings, geotextile wrapped soil-lifts, reed rolls, gabions, and brush mattresses with fascines.

These techniques are made of natural materials and plants that will also develop and establish, forming natural habitats that encourage certain wildlife species to settle and multiply over time. This helps to contribute to the biodiversity of the park.

Visitor Information

To the Park

| Road Name | By Bus | Nearest Train Station |
|----------------------------|------------|---|
| ANG MO KIO AVENUE 1 | | |
| 1 | Bus Stop 1 | 132, 165, 166, 169 |
| 2 | Bus Stop 2 | 132, 165, 166, 169 |
| 3 | Bus Stop 3 | 71, 262 |
| 4 | Bus Stop 4 | 71, 262 |
| 5 | Bus Stop 5 | 71, 133, 136, 262 |
| 6 | Bus Stop 6 | 71, 133, 136, 262 |
| 7 | Bus Stop 7 | 71, 133, 136, 262 |
| BISHAN ROAD | | |
| 8 | Bus Stop 8 | 50, 53, 55, 55B, 58, 71, 156, 162, 162M |



About the Active, Beautiful, Clean Waters (ABC Waters) Programme

Singapore's blue network comprises 17 reservoirs and a pervasive network of rivers, canals and drains.

Launched in April 2006, the Active, Beautiful, Clean Waters (ABC Waters) Programme aims to transform Singapore's waterways and waterbodies beyond their utilitarian functions into beautiful and vibrant streams, rivers and lakes. Through the programme, PUB creates community and recreational nodes close to water that people can enjoy so that they can cherish this precious resource and in turn, keep our waters clean.

To date, more than 35 projects have been completed by PUB.

Self-Guided Learning Trail

Participate in the ABC Waters Learning Trail @ Kallang River @ Bishan - Ang Mo Kio Park:

- Learn about water sustainability and the Four National Taps including the water cycle and water treatment processes
- Learn about the concept of ABC Waters Programme and ABC Waters design features
- Gain insights into the unique bioengineering techniques put in place to transform a concrete canal into a naturalised river at Bishan - Ang Mo Kio Park
- Get your feet wet as you explore aquatic life in the water, by the water and around the water

Download the resource package for an experiential learning experience at our ABC Waters site:

- Student's Learning Trail Booklet <https://www.pub.gov.sg/Documents/KRBAMKParkStudentTrail.pdf>
- Trainer's Guide https://www.pub.gov.sg/Documents/ABC_Waters_KRBP_Trainer_Guide.pdf



For more information, please visit the web site at <https://www.pub.gov.sg/abcwaters>

Kallang River @ Bishan-Ang Mo Kio Park





Kallang River at Bishan-Ang Mo Kio Park

Project Features



Transformation of a 2.7 kilometre-long concretised canal into a 3 kilometre-long naturalised river with bio-engineered river edges using a variety of plants and bedding materials. The naturalised river meanders through the park so park users can get closer to the water



The Cleansing Biotope serves to treat water from the Kallang River and Landscape Pond. Clear, filtered water cascades from Cleansing Biotope into the Landscape Pond. This treated water is also channeled to the Water Playground after further UV treatment.



Themed playgrounds to suit different age groups and abilities of park users



Bridges to improve the connectivity between the park and neighbourhood

There are several lawns and open spaces interspersed throughout Bishan-Ang Mo Kio Park which are for outdoor events such as festivals and community gatherings. There are 4 lawns (Ficus Green, Tecoma Green, Activity Lawn and Mempat Green) and 1 hard court (Promenade) for public booking. The total area of these spaces is 63,500sqm.



Gravel swales as part of the natural drainage system around the park



Commercial spaces such as cafes



A landmark viewpoint with a sculpture on Recycle Hill. Recycle Hill is made using pieces of the old canal

- CARPARK
- LIFESTYLE HUB
- INFO POINT
- BUS STOP
- NPARKS OFFICE
- FOOD & BEVERAGE
- FITNESS STATION
- TOILET
- PARK CONNECTOR
- SAFETY NODE
- SAFETY LINE

Biodiversity

The bio-engineering techniques create habitats for flora and fauna and the new river teems with life. With the naturalized river and newly formed habitats in the park, the diversity in microhabitat types in the park contributed to an observable increase in biodiversity. Up to 94 bird species, 46 butterfly species, 38 dragonfly species and 150 wildflower species have been recorded in Bishan-Ang Mo Kio Park. Since the park's rejuvenation, green spaces have increased by 12% and water quality of the pond is maintained without the use of chemicals via a cleansing biotope. The natural river adds 10 hectares of wildlife habitat and active recreational space that doubles up as a flood plain during rain events.

Scaly Breasted Munia
(*Lonchura punctulata*)

The adult has a stubby dark bill, brown upperparts and a dark brown head. The underparts are white with markings that resemble black scales. They feed on grass seeds and live among tall grasses in flocks.

Purple Heron
(*Ardea purpurea*)

The Purple Heron is the most colourful large heron in Bishan-Ang Mo Kio Park. Its purple plumage is perfect for camouflaging in the tall, wild grasses along the river banks.

Variable Wisp
(*Agriocnemis femina*)

They can be spotted in the thick grassy areas along the river. Their colours change with age, and the male and female sexes are different in colour.

Peacock Pansy
(*Junonia almana*)

The adult Peacock Pansy has a bright orange upperside, striking eye spots, and attractive purple patterns on the hindwings.

Little Egret
(*Egretta garzetta*)

The Little Egret is the smallest and most common egret in Singapore. It has a white body with black legs and yellow feet. The river at Bishan-Ang Mo Kio Park is a fishing ground for these birds.

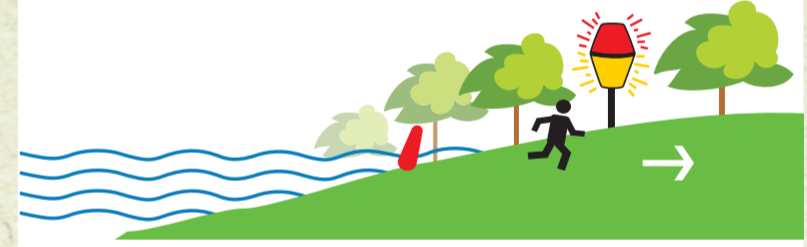
Common Scarlet
(*Crocothemis servilia*)

The Common Scarlet is one of Singapore's most common dragonfly species. The mature males are easily recognised by the bright red colour and black line on the abdomen. This species was one of the first to settle down in the new river at Bishan-Ang Mo Kio Park.

Smooth-Coated Otters
(*Lutrogale perspicillata*)

The Smooth-Coated Otter can stay underwater for up to eight minutes! This allows it to hunt for fish, crabs and other creatures in a single breath.

Comprehensive Safety System



It is important to take care when having fun in the river. The river is linked to a network of drains, and during heavy rain, the river banks double up as a conveyance channel, carrying rainwater downstream to Marina Reservoir.

For your safety, please pay attention to the following:



Safety nodes with warning lights and life buoys
When the water level in the river rises, you will hear announcements advising you to move out of the river. Lights on the safety nodes will also flash. Take note of the announcements and warning lights, and move beyond the red markers as indicated. For emergencies, life buoys are provided at each of the safety nodes.



Red markers
Red markers have been placed along the river. Take note of them when you enter the river, and move beyond the red markers when the warning lights flash.

Safety Lines
Take note of the safety lines. These lines will float with the water level and serve as an additional precautionary measure.

In the event of emergencies, please call 995.