

## Gardens by the Bay and Applied Research: Bringing a World of Plants to Singapore

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### Abstract

Gardens by the Bay is a national garden covering 101 hectares in the Central Region of Singapore, adjacent to the Marina Reservoir. The park consists of three waterfront gardens: Bay South Garden, Bay East Garden and Bay Central Garden. Cooled

conservatories display plants that cannot be grown outdoors in the climate of Singapore. The Research & Horticulture Department conducts trials for plants to be displayed at the Flower Field in Flower Dome and the Orchid Corner in Cloud Forest.

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### INTRODUCTION

A national garden and premier horticultural attraction for local and international visitors, Gardens by the Bay is a showpiece of horticulture and garden artistry that presents the plant kingdom in a whole new way, entertaining while educating visitors with plants seldom seen in this part of the world, ranging from species in cool,

temperate climates to tropical forests and habitats.

### WATERFRONT GARDENS

Gardens by the Bay comprises three distinctive waterfront gardens: Bay South, Bay East and Bay Central (Figure 1).

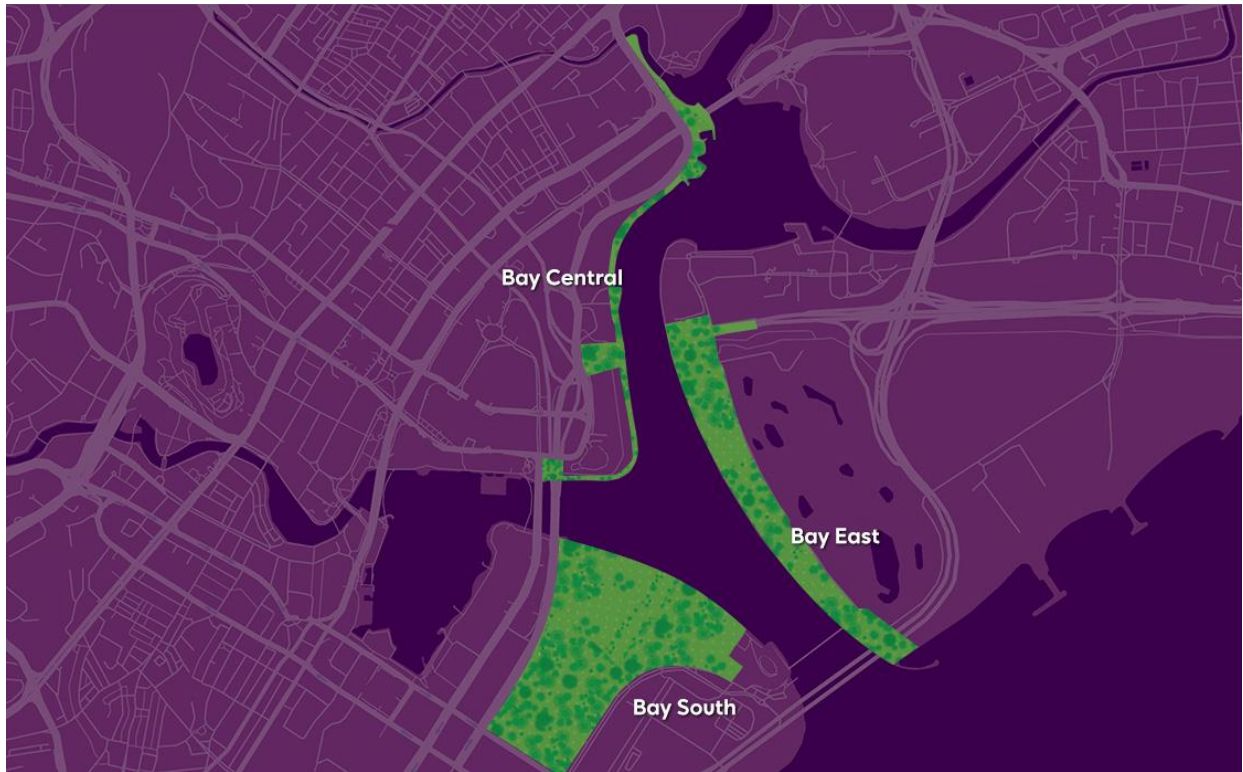


Figure 1. The three waterfront gardens at Gardens by the Bay in Singapore: Bay South, Bay East, and Bay Central.

Bay South, the largest of the three gardens with an area of 54 hectares, opened in 2012. With its award-winning, cooled conservatories and iconic Supertrees, Bay South has placed Singapore squarely on the international map and is a source of national pride. Within Flower Dome, the ever-changing floral displays including crowd favourites such as Tulipmania, Orchid Extravaganza, and Cherry Blossoms bring the beauty and diversity of the plant kingdom to life for all to enjoy.

Bay East, the second largest garden, offers a tranquil respite from the bustling city and a stunning view of the Singapore skyline even as it unfolds over the next century. This green space is open to the public and has immense potential for future development as a waterfront garden.

Bay Central is the garden which will serve as a link between Bay South to Bay East when developed. The garden features a

3km waterfront promenade boasting stunning views of the city.

While plant displays remain the focal point of Gardens by the Bay, engaging programmes and excellent service form key pillars in enhancing the Gardens' overall visitor experience.

## OUTDOOR GARDENS

The outdoor gardens comprise different themed gardens: Heritage Gardens, World of Plants, Sun Pavilion, Silver Garden, Dragonfly Lake, Kingfisher Lake, and Supertree Grove. A large representation of the plant kingdom comes from different parts of the tropical and subtropical regions. The main plant collections are orchids, palms (Figure 2), aroids, and tropical trees. The outdoor gardens are meant for both serious and not-so-serious plant lovers.



Figure 2. Rare and unusual palms in the outdoor gardens at Gardens by the Bay in Singapore.

### COOLED CONSERVATORIES

The two conservatories (Figure 3) are of great interest and visitors can be expected to be wowed by seeing plants that cannot be

grown outside in the tropics. Flower Dome offers a Mediterranean feel while the Cloud Forest exudes a sense of misty, montane forest in the highlands.



Figure 3. View of the two conservatories at Gardens by the Bay in Singapore: Flower Dome and Cloud Forest.

## FLOWER TRIALS TO PRODUCTION TO FLOWER DISPLAY

Currently, there are seven changing plant-centric displays in Flower Dome and two curated orchid displays in Cloud Forest. Since the two conservatories are ticketed, the shows have to be attractive to draw in local and foreign visitors. In 2017, visitor ship was 3 million.

In the initial years since the garden's inception, the displays were largely centered on the readily available plants that could be procured from local or overseas nurseries. Over time, there have been many challenges. The displays need to be innovative and novel. Visitors have become more sophisticated and their expectations are higher.

Many criteria must be fulfilled. While design is an important aspect of the show, so

are the plant materials. Each display is focused on the plant materials to bring out the central theme of the show. The ratio of flower colours to green foliage has to be high, otherwise the display is deemed uninteresting or unappealing.

The role of the Research & Horticulture Department is to support the flower display team by conducting trials for plants to be displayed at the Flower Field in Flower Dome (Figure 4) and the Orchid Corner in Cloud Forest. Most of the trials are carried out to assess flowering duration and to prolong the postharvest lifespan of the flowers. Besides trials, the growers at Gardens by the Bay are tasked with cultivating specialty crops like dahlias and begonias, as these plants do not travel well if they are imported from overseas.

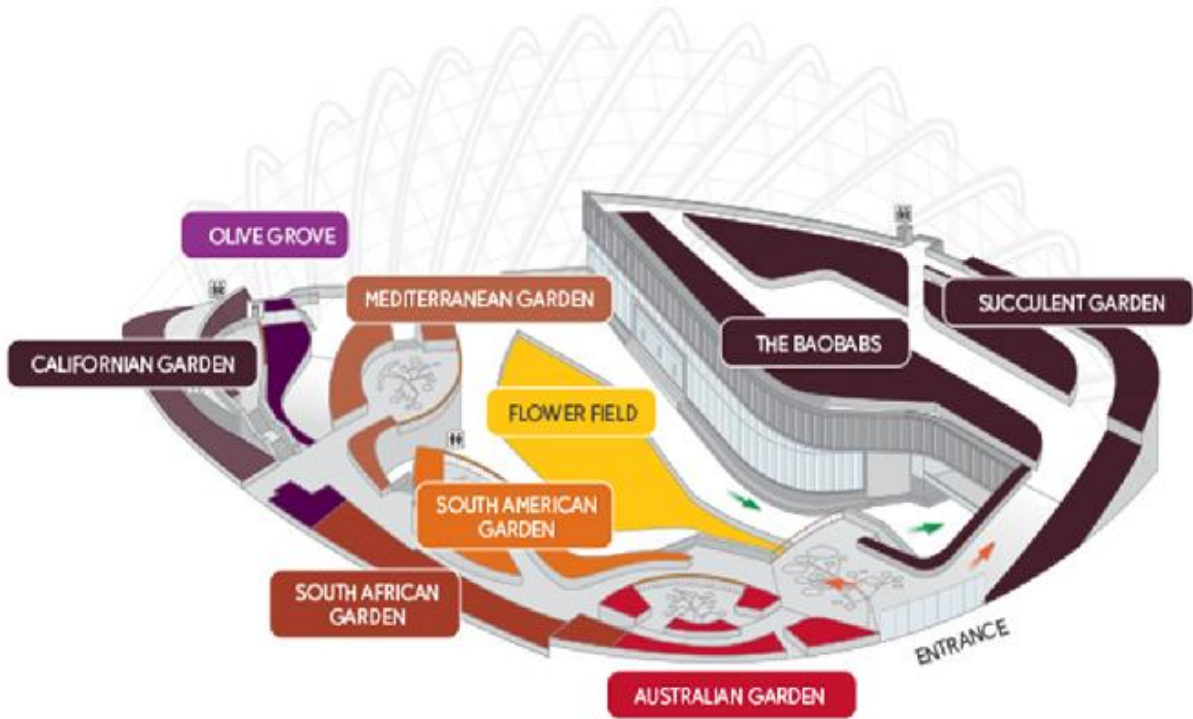


Figure 4. The gardens inside the Flower Dome at Gardens by the Bay in Singapore.