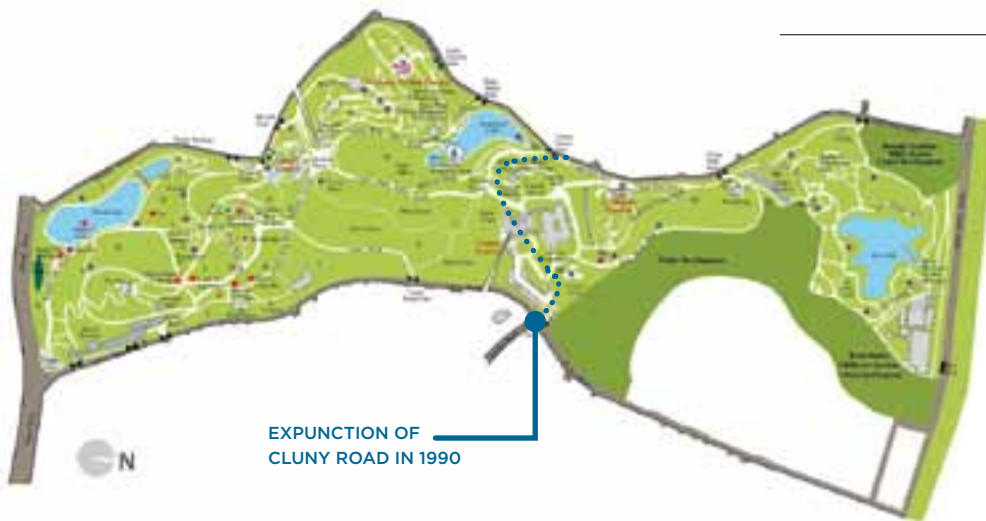




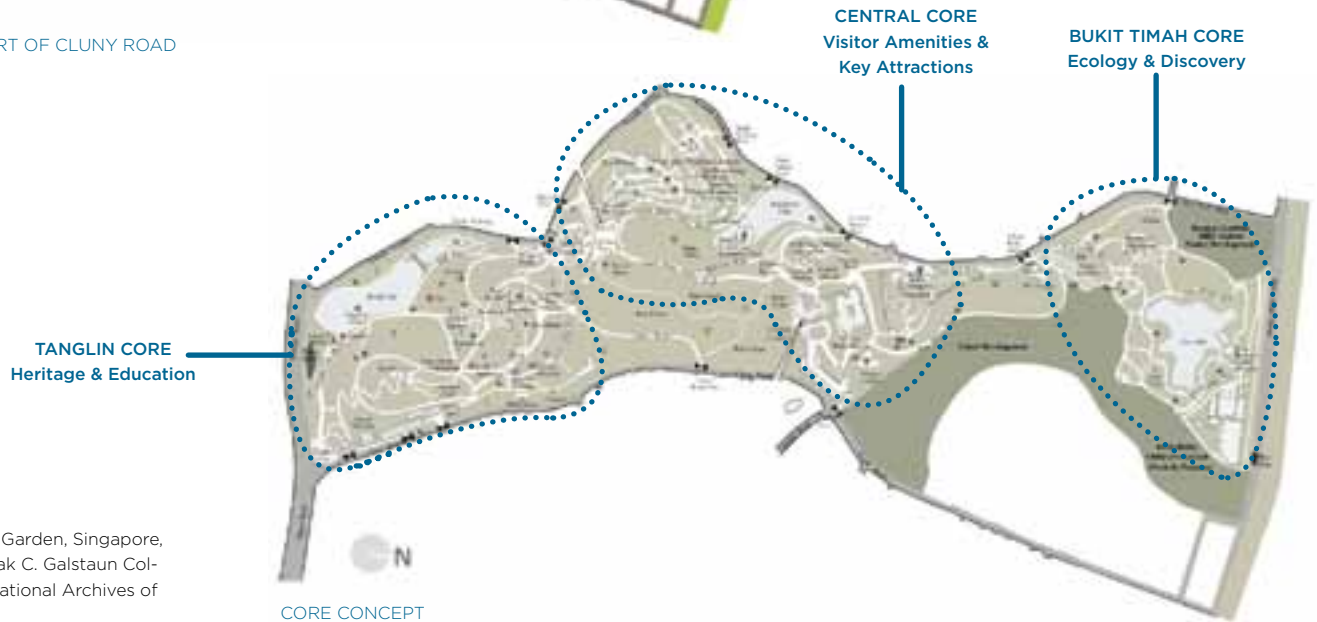
Past, Present, Future

The Singapore Botanic Gardens

Text by Peter How
Images as credited



EXPUNCTION OF PART OF CLUNY ROAD



CORE CONCEPT

OPPOSITE Botanical Garden, Singapore, painted in 1907 (Arshak C. Galstaun Collection, Courtesy of National Archives of Singapore).

The Singapore Botanic Gardens (SBG) is a much-loved green oasis and is also one of Singapore's most popular attractions. Its diverse plant collection and verdant landscaped spaces are picture-perfect and it is easy for a visitor to forget that he is in the midst of a large bustling city while strolling on its tranquil and immaculately manicured grounds. Its central location in the city makes it a green lung; large swathes of the city around it enjoy the borrowed views of its thick mantle of greenery. It is Nature at its most accessible – with mature vegetation and even to a tract of a primary rainforest within a stone's throw from the adjoin city. It is even said to be a climate moderator with its own microclimate that some claim is perceptibly different.

SBG is also old and venerable. Originating in 1859, it celebrated its 150th anniversary two years back. Established by the British as an experimental agricultural station and botanical institution, the Gardens made significant contri-

butions to the advancement of botany and horticulture, shaping the economic landscape of this region. For example, the spectacular rise of the rubber industry was in no small part due to the pioneering research efforts conducted at the Gardens. Later initiatives on orchid propagation through tissue culture and the greening of Singapore were no less impactful.

The Remaking of the Gardens: The 1990 SBG Masterplan

The tempo of evolution of the Gardens quickened in 1990 when a redevelopment master plan was proposed. Prior to this, the Gardens had a laid-back air, as some of us of a certain vintage will recollect. It was a lovely green space and a popular recreational spot. The orchid collection was a hit with tourists, but it had few other high profile attractions. Its visitor amenities were basic and its botanical research was then directed towards more pragmatic purposes.

The objective of the redevelopment amounted to a total re-branding. The vision was to turn SBG into a premier botanic gardens of the tropics, raising its profile internationally. To achieve this, its attractions had to be enhanced, and new attractions created. Furthermore, other aspects had to be strengthened in tandem, for example, its living collections, ex-situ conservation programmes, scientific research, public education and outreach, business strategies, operations and upkeep.

The culmination of more than a year's intensive study and rumination resulted in a masterplan drawn up jointly by National Parks Board, Public Works Department (now CPG Consultants) and Jones and Jones – an American landscape design firm. This masterplan provided a holistic framework for a series of enhancements implemented in a coordinated fashion over the next 20 years, transforming the Gardens to what it is today.

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Highlights of the Master Plan

Seamless integration: Expunction of part of Cluny Road

It is little known today but in 1990 the 51-ha SBG existed as two separate tracts dissected by Cluny Road. The portion closer to Napier Road was the established park while the other portion which stretched right up to Bukit Timah Road was at that time a recent addition to the Gardens, comprising land returned after the relocation of the adjoining university. This portion was also relatively less developed and visited.

A bold decision was taken to expunge the portion of the Cluny Road that separated the Gardens – resulting in a seamless connectedness that opened up new possibilities for the redevelopment.

Overcoming Geography: Adopting the Multiple Core concept

Most visitors are aware of the distinctive site configuration of SBG, which appears as a remarkably long linear strip on the sign boards. It is about 2.5 kilometres from end to end. This poses a challenge to visitors, given Singapore's hot humid climate. To compound the problem, the Gardens at that time was approached from the Main Gate entrance located at one extremity at the Napier/Cluny Road junction.

To address this, the master plan adopted the Core concept. It was realised that not many visitors would have the time nor inclination to see the entire Gardens on a single trip. The Core concept avoids the problem altogether in the creation of several cores, each holding a critical mass of attractions in close proximity to each other and having its own independent access. Three quite distinct cores emerged.

They are the Central Core, straddling across the boundary between the new and old portions of the Gardens, the Tanglin Core, serving the old established Gardens, and the Bukit Timah Core at the newer portion of SBG. Each of these cores is distinct and has its own unique identity. The Central Core has most of the big attractions, such as the National Orchid Garden (NOG) and the majestic Palm Valley overlooking Symphony Lake, and is equipped with the infrastructure to deal with mass visitors on organised visits. The Tanglin Core's focus is on heritage, botanical research and public outreach while the Bukit Timah core, leveraging on its traditional association with economic plant collections, has its focus on education and discovery.

The multiple core concept provided an organised framework to create a greater diversity of visitor experience and allowed the development to be implemented in a coordinated manner, and in cohesive packages that minimised the adverse impact of construction.

Garnering Support: Formula for Achieving Early Success

Given that the masterplan would be implemented in stages over a prolonged period, it was important to develop a strategy that could allow for early success. This would then help secure buy-in from stakeholders and the public, providing further support and momentum to propel the implementation further. The first core to be developed was the Central Core. The expunction of part of Cluny Road resulted in new vacant land that could be developed for a new visitor centre. This was a critical test-case project since the Gardens then did not have any amenities such as coach parking, visitor orientation facilities, shops and F&B outlets. At

OPPOSITE, CLOCKWISE FROM TOP

The EcoLake at the Bukit Timah Core replaced a former concrete-edged stormwater retention pond, and supports a rich variety of wetland vegetation; The verdant Palm Valley is one of the most popular spots in SBG, frequently used as a family picnic spot (Photos: CPG Consultants Ltd); International accolades such as Time Magazine's choice of the Gardens as "Asia's Best Urban Jungle" and a three Michelin Star rating by the Michelin Green Guide bear testimony to the Gardens' enduring charm (Photo: National Parks Board, Singapore).



the same time, the existing Orchid Enclosure housing the Gardens' most popular attraction was entirely replanned on a bigger site on the slopes of an adjacent knoll. The revamped NOG, – a world class attraction by any measure, and the new Nassim visitor centre were instrumental in conveying to the world at large an early preview of the vision of the master plan, and securing acceptance and approbation to move forward with it.

Raising the Interest Quotient: Creating New Attractions

The master plan called for a slew of new exciting world-class attractions and diverse plant collections. The expanded orchid collection in the NOG is the star attraction. Not only was it beautifully laid out in a stunning colour-themed arrangement, it included an orchidarium for native species, mist houses for an accompanying bromeliad collection and a cool house for tropical high altitude orchids. With its extensive range, imaginative displays and a collection of specially created hybrids named after visiting VIPs and dignitaries, the NOG is frequently touted as having one of the best orchid displays in the world.

A concrete-lined stormwater retention pond at the Bukit Timah Core was transformed into the Ecolake – a naturalistic waterbody with gently sloping vegetated banks. With its backdrop of gentle mounds, worked into the predominantly flat site to create topographic interest and shield the gardens from the visual and acoustic impact of adjacent major roads, the Ecolake is now a key scenic centerpiece in this core.

Other new attractions include the Evolution Garden and the Jacob Ballas Children's Garden. The 1.5-hectare Evolution Garden is particularly inventive, boldly making use of a spiraling landform to evoke the grand sweep of time across the geological epochs, and showcase the transformation of plants from simple single-celled organisms (depicted as stromatolites) to the rise of flowering plants.

The Children's Garden on the other hand is highly interactive and uses a slew of innovative interpretation techniques to bring home the salient messages of ecology and nature.

New or revamped plant collections done with great horticultural finesse are other highlights, such as the Palm Valley, Marsh Garden around Symphony Lake, Ginger Garden and the lovely landscaped areas and thematic planting around the Band Stand.





LEFT, CLOCKWISE FROM TOP LEFT
The Nassim Visitor Centre at the Central Core is the first visitor centre to be built. It is a low sprawling building well-integrated into its lushly-vegetated environment.

A part view of the Shaw Foundation Symphony Stage showing its organic shape and profile. Sited on an island in the Symphony Lake, it is used as for outdoor concerts and performances.

Burkill Hall used to be the residence of past SBG Directors during colonial days. Now a gazetted National Monument, the building has been restored and adapted for re-use as a VIP Reception and Events Hall, located in the midst of the National Orchid Garden.



Sited at the highest point of the Gardens on a grassy knoll and ringed by yellow rain trees, the Band Stand is one of the most visually prominent highlights of the heritage-filled Tanglin Core.

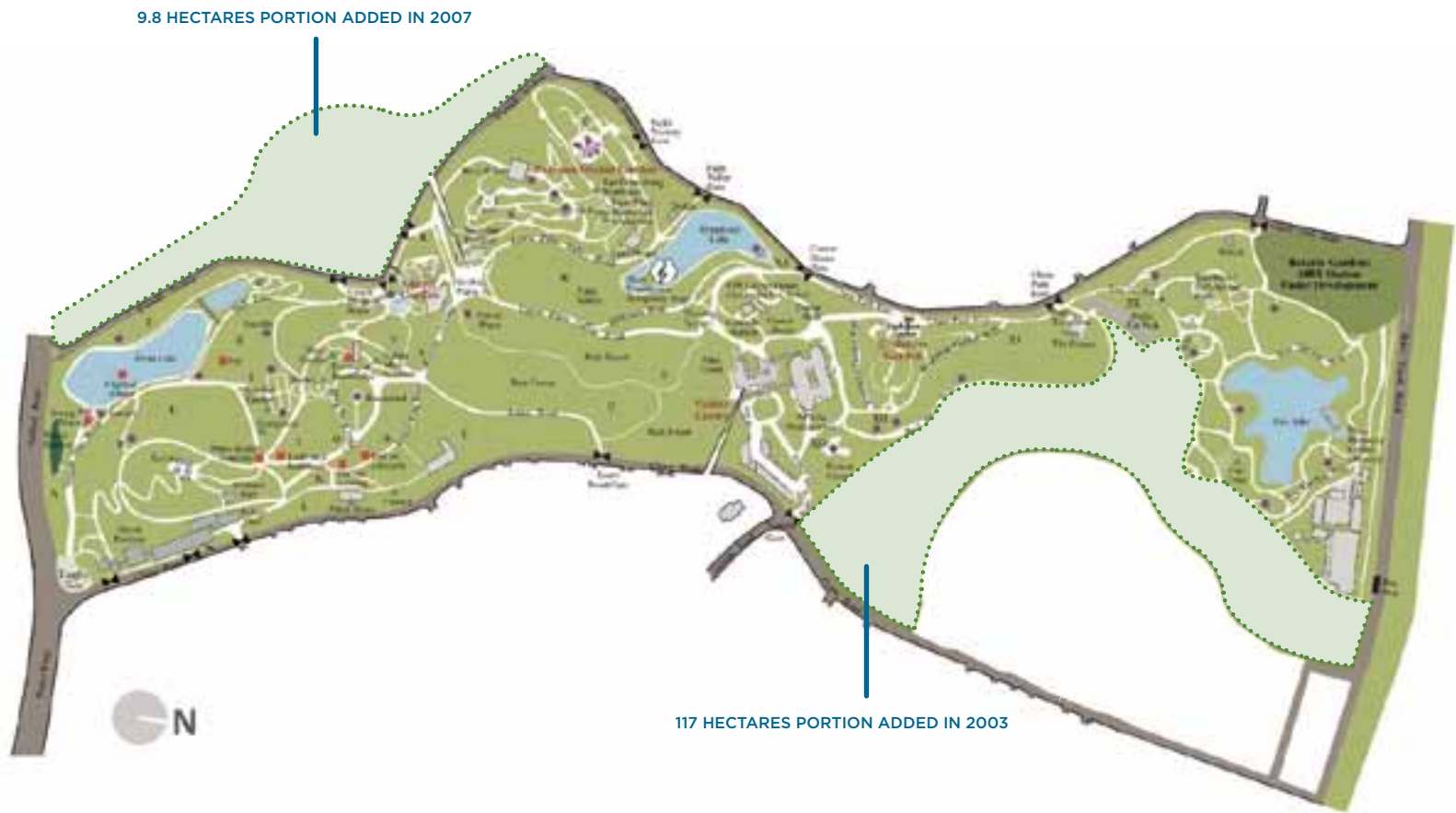
A Mist House in the National Orchid Garden displaying an indoor orchid collection.

The Jacob Ballas Children's Garden use highly interactive means to bring home the important lesson that life on earth is dependent on plants.

The Cool House originally planned as a prototype for the Cloud Forest Biosphere, has a collection of high-altitude tropical orchids, thus adding further strength to the National Orchid Garden collection.

(Images courtesy of CPG Consultants Ltd).





Dealing with Changing Circumstances: Planning for Flexibility

A long term master plan invariably falls short or is rendered obsolete by changing circumstances of an uncertain future. The SBG master plan fortunately has remained remarkably true to what it set out to be. The Core concept is still valid today and many of the associated projects were implemented as originally envisaged. Still, there were many deviations. For example, one of the signature attractions planned, the Cloud Forest biosphere, which was to be a repository for high altitude equatorial flora, was built as a prototype Cool House instead. This showcase of high elevation orchids has proven to be very popular with visitors. The location of an MRT station at the Bukit Timah Core was not anticipated in the master plan; neither was the possibility of a further realignment of Cluny Road near the Tanglin Core, bringing the old Taman Serasi food centre into the Gardens domain. In all these instances, the inherent slack in the Core concept allowed the planning to be modified accordingly. There were also numerous instances where plans had to be modified to suit site conditions, prevailing political or economic

situations and changing needs of the public, donors and stakeholders, as would be the case in the implementation of any long-drawn public project.

It is important therefore that a master plan should have intrinsic flexibility built-in to accommodate such circumstances. SBG was also fortunate to have benefited from good stewardship from its management, allowing coherence and consistency in the translation of the vision into reality over an extended period.

The Future: The Next Flowering

In 2003, SBG regained a 11.7-hectare addition from the adjacent campus grounds. This substantial addition spawned a new master planning exercise. This afforded the opportunity for increasing botanical biodiversity as well as enhancing visitor amenities. Seamless integration to tie in with the bigger whole is critical to avoid ad-hoc developments that usually accompanies such organic growth. A new carpark incorporating the use of landscaped bioswales has already been completed and the Healing Garden, which showcases medicinal plants, is

in an advanced stage of completion. This will be followed by other botanical highlights in the Bukit Timah core, where the construction of a new MRT interchange station promises to bring a new surge of visitors to this part of SBG.

An additional 9.8 hectares of land on the other side of Tyresall Avenue was recently added to the SBG domain. Largely forested, this new asset provides opportunities for ex-situ conservation, research and education. Through use of innovative interpretative techniques, this new extension of the Gardens, called the Learning Forest, will showcase native lowland trees and marsh land vegetation and the ecological interdependencies that hold them in balance.

When SBG celebrated its 150th anniversary, many might have been impressed at how it has

evolved. Over the two decades, it has built on its history and heritage of excellence in research, conservation and education, transforming the Gardens from a passive recreational space with a living collection of taxonomic interest into something far more all-encompassing and active. In fulfilling its objective as a premier tropical botanic garden, SBG has to take on multiple roles: as a public green oasis for an increasingly crowded island, as a top-notch tourist attraction, as a relevant scientific institution, and as a centre of public education and outreach. As SBG moves into the next phase of its existence, there is urgent need for greater activism – to bring home the lessons of ecology, biodiversity and sustainability – in a world that is increasingly ravaged by environmental degradation and climate change. ☺

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