

September 8, 2009

**Taikisha Ltd. Awarded ACMV & BMS Contract for Gardens by the Bay –Upcoming Garden Comprising 2 Cooled Conservatory Complexes in Singapore**

Taikisha (Singapore) Ltd. [subsidiary company of Taikisha LTD (located in Shinjyuku-ku Tokyo Japan; President: Yoshiro Nakaya)] has been awarded the ACMV and BMS works for the Gardens by the Bay project by the Singapore National Parks Board (NParks). The selection was done by open tender.

About Gardens by the Bay

Gardens by the Bay is one of the major development projects in the Marina Bay area in Singapore. At 101 ha, Gardens by the Bay comprises three interconnected waterfront Gardens, namely: Gardens at Marina South (54 ha), Gardens at Marina East (32 ha) and Gardens at Marina Centre (15 ha). The Gardens at Marina South will be the first to be implemented, and targeted to open in end 2011.

The Gardens at Marina South will showcase the best of tropical horticulture and garden artistry, with *en mass* display of tropical flowers and coloured foliage. At the heart of the Gardens are the following two key features:

- The Cooled Conservatory Complex. The Conservatory will be an architectural icon, a horticultural attraction and a showcase of sustainable energy technology. It will provide an all-weather “edutainment” space within the Garden. Comprising a “Cool Moist” biome (0.8 ha) and a “Cool Dry” biome (1.2 ha), it will display plants and flowers from the Tropical Montane<sup>1</sup> and Mediterranean environments.
- SuperTrees. Designed as tree-like structures between 30m and 55m (9 to 16 stories) in height, the SuperTrees are uniquely designed vertical gardens, with emphasis placed on creating a “wow” factor through the vertical display of tropical flowering climbers, epiphytes and ferns. The SuperTrees will also be embedded with sustainable energy and water technologies that are integral to the cooling of the Conservatory.

---

<sup>1</sup> This refers to high elevation environments in the Tropics, 1,500 m above sea level. It encompasses the Cloud Forest belt, which contains some of the most attractive plant species.

### Outline of Taikisha's work in the Gardens by the Bay project

ACMV and BMS works will be carried out for the following structures in the Gardens:

- The two conservatory biomes,
- Support building
- Facility Office
- Basement carpark
- Energy Centre

The 2 conservatories biomes will be using slab cooling, displacement diffuser, underground return air duct and blind control to achieve energy efficiency and plant friendly facilities.

Taikisha believes that the reason for the award of this project is not only due to cost but also because of Taikisha's engineering capability.

Lastly, Gardens by the Bay is a premier development project in Singapore and Taikisha is very honoured to participate in the project. This project also plays an important role in advancing Taikisha's overseas business strategies.



Image of the conservatories biome



Image of the exterior appearance

### Outline of the Project

Project Title	Gardens by the Bay
Location	Marina South, Singapore
Client	National Parks Board (NParks)
Duration	Jun 2009 to Jan 2012
Systems	<p><b><u>ACMV system for cooled conservatories</u></b> Slab Cooling, Displacement Diffusers, Blind Control, Liquid Desiccant Cooling</p> <p><b><u>Energy Centre</u></b> Absorption Chiller, Electrical Chiller, Low Noise Cooling Tower, District Cooling Station</p> <p><b><u>Others</u></b> Conventional ACMV, BMS</p>
Area	Total Area of 3 Gardens: 101 ha, Gardens at Marina South: 54 ha.
Contract Value	SGD 48.6 million
Consultant	CPG Consultants Pte Ltd, Atelier Ten