References

Gardens by the Bay, Singapore



Uponor involvement

1010000

Gardens by the Bay, Singapore

Gardens by the Bay comprises two glass-domed conservatories and one waterfront garden in the heart of Singapore, around the Marina Channel. Uponor is proud to supply its radiant cooling solution to this premier tropical garden city.

Project Facts:

Location	Completion	
Marina Bay, Singapore	2011	
Vrsta objekta	Product systems	
Municipal	Površinsko grejanje i hlađenje	
Address	Website	Project Type
National Parks Board Singapore	http://www.gardensbythebay.org.sg/	New building

Partners

architect
Atelier Ten Ltd., London
United Kingdom

contractor
Taikisha Singapore Pte. Ltd.
Singapore

investor
National Parks Board
1 Clury Road, Singapore 259569
Singapore

specifier
CPG Corporation Pte Ltd
Singapore

Built on land that was reclaimed from the sea 30 years ago, the total size of Gardens by the Bay is 101 hectares or 177 football fields. The project is meant to align with the city's vision of transforming into a giant garden. Some major attractions include the Heritage Gardens, the Flower Dome, Dragonfly Lake, Bay East Gardens, and Golden & Silver Gardens.

The two conservatories are designed with environmental sustainability in mind, applying cutting-edge technologies that provide energy-efficient solutions in cooling. Uponor is installing 7,500 square metres of radiant floor cooling for the conservatories as well as the concrete walkways.

The idea of the project is to create thermal comfortable conditions for the visitors on the walkways with minimum influence on the surrounding Mediterranean and Sub-tropical climate for the Gardens. Uponor’s hydronic radiant cooling system absorbs the sun radiation on the floor and keeps the area cool, meanwhile the set point temperature for the ambient climate zones is approximately 27,5°C.

To further demonstrate sustainable practice, Uponor partnered with German climate engineers Transsolar, who performed a thermal simulation for around-the-clock temperature distribution by using special software for dynamic thermal building simulations and a dynamic multi-zone building model. Combined with Uponor long-term experience on radiant cooling solutions the results have been transferred into practice. This indoor climate simulation ensures the highest possible comfort in addition to the lowest possible impact on the environment.

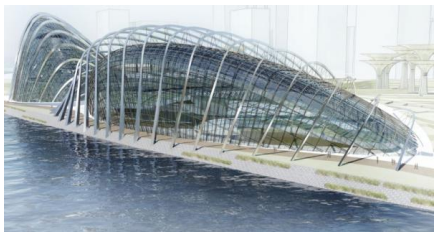
Gardens by the Bay were tendered by the main contractor Taikisha (Japan) to Uponor via our local partner Seng Choon. The project presented an opportunity for Uponor to showcase its sustainable energy solutions in south-east Asia. It also paved the way for a new partnership in Indonesia to promote Uponor cooling solutions.

Gardens by the Bay, Singapore









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