

CASE STUDY FEATURE

BUILDING THE MARINA BAY SANDS SKYPARK POOL



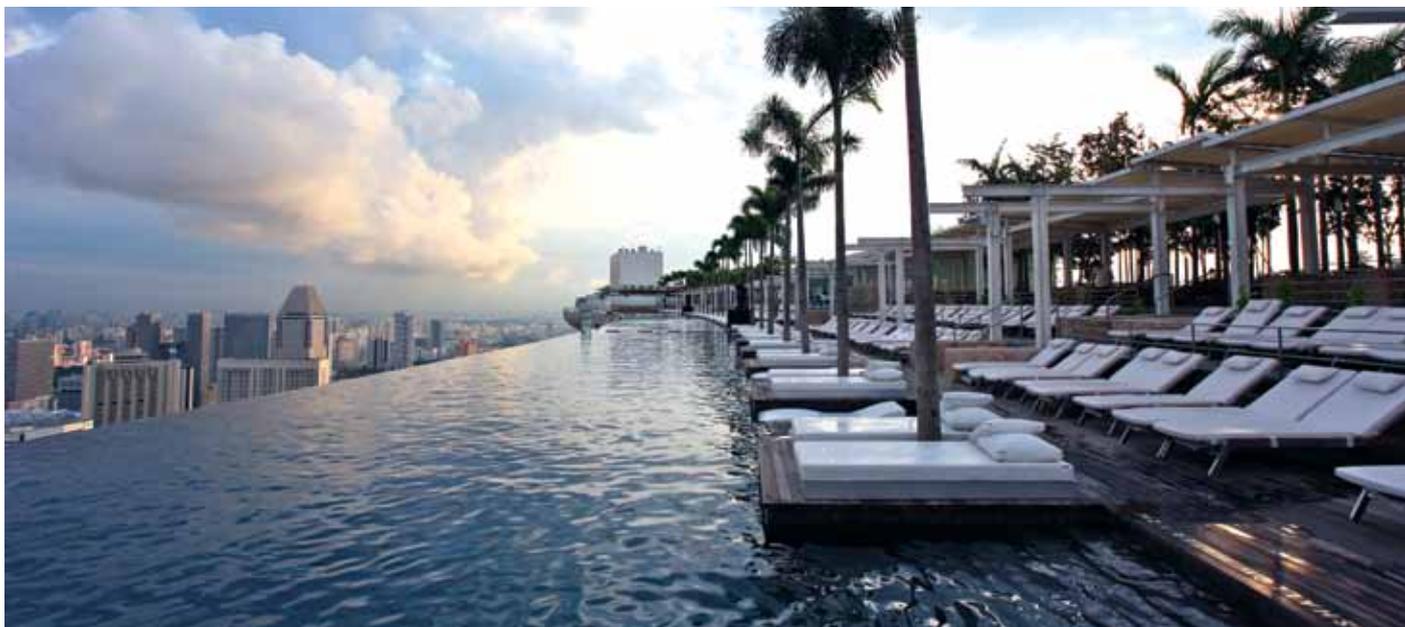
OVERVIEW OF THE MARINA BAY SANDS SKYPARK POOL



Amongst the many architectural highlights of the new Marina Bay Sands Integrated Resort in Singapore, one tops them all literally. Situated on top of the three hotel towers on the 57th storey, the Sands SkyPark is a 340-metre long superstructure that comprises landscaped gardens, dining facilities, an entertainment venue and one of the world's best swimming pools today.

The 150-metre long pool spans the tops of the three separate hotel towers of the Marina Bay Sands, at a dizzying elevation of 200 metres above ground. With a 'vanishing' infinity edge that faces Singapore's central business districts, the spectacular pool offers swimmers uncompromising views of the island's urban cityscape.

Currently known to be the highest and largest elevated pool in the world, the Sands SkyPark pool was by no means easy to build. For the construction of the pool, the team at Innovez Engineering was taken to task on its primary challenge – to maintain structural stability in the face of building movements created by the gravitational pull and wind loads.



in the successful resolution of this challenge. Of the many creative solutions used, two were instrumental in creating the flexibility necessary for the pool to absorb the simultaneous movements of the three hotel towers. Comprising of three separate 50-metre long stainless steel enclosures, the pool is connected at each joint by 4-tonne moveable terraces that function like “bridges”. Not only do these terraces allow for movement across its length, it also serves to connect three separate pools so that it appears as one. In addition, the stainless steel enclosures are built on over 490 jacklegs so that the height at various parts of the pool can be adjusted at will, according to building settlement.

In spite of the complexity, the Sands SkyPark pool was completed in a mere span of 7 months. It now represents a milestone in design and engineering, and stands as an iconic landmark of Singapore.

QUICK FACTS ON THE SANDS SKYPARK POOL

Dimensions	150m (L) x 8m (W) x 1.2m (depth)
Total volume of water	1.4 million litres
Total pool surface area	1,396 m ²
Elevation	57 stories, 200 metres
Weight of pre-fabricated stainless steel used	191,416 kg
Number of movement joints beneath the pool	Four
Maximum range of movement joints	500 mm
Number of adjustable jacklegs	496
Maximum range of adjustable jacklegs	106 mm
Number of tiles used	254,522



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Innovez Engineering is a leading design-and-build swimming pool specialist based in Singapore. Offering a varied range of aquatic products and equipment, Innovez also provides the capabilities that span the building of a world-class aquatic facility – from pool design to construction to maintenance.

At Innovez, design vision is preserved through the use of cutting-edge technologies and inventive engineering, so designs can be better translated from paper to reality. Combining the best-in-class materials, technologies and equipment with engineering know-how and construction expertise, Innovez strives to deliver maximum value and quality to clients.

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