

# Q1 Residential Tower

Project Report - Queensland

May 2003 saw Sunland Construction commence construction of the world's tallest residential tower situated at Clifford Street, Surfers Paradise. The Q1 tower is a total of 80 levels and reaches 275m skyward. The design is by Sunland's in-house design team, with support from Mr Brian Whaley (Whaley Consulting Group).



## Solutions developed

Holcim developed an innovative method of adapting the mix design to ensure the pumpability of the concrete as the Q1 building grew. With four changes in concrete mix design Holcim provided concrete that was capable of being pumped 62m in the horizontal direction and a further 240m in the vertical direction. Each mix design change involved a change in aggregate proportions and admixtures to ensure that the optimum pumpability was achieved without segregation or pump blockages, whilst still maintaining the engineering properties of the concrete mix.



## Key design criteria

The key design criterion for the Q1 tower's concrete requirement was to provide an innovative concrete solution to ensure the concrete could be pumped to great heights.

## Concrete used

The concrete used in the construction of Q1 in Surfers Paradise included:

- 65MPa - for vertical columns from the ground level to level 10
- 50MPa - for vertical columns for levels 10 through to level 30
- 40MPa - for vertical columns from levels 30 through to level 80
- 40 MPa for suspended slabs from ground level to level 80.

Location	Surfers Paradise, Qld
Client	Sunland Constructions
Contractor	Sunland Constructions
Engineer	Sunland Construction In-house engineers
Products supplied	58,000m <sup>3</sup> of concrete including • High strength concrete • High slump concrete
Commencement	May 2003
Completion	October 2005