

**Client:**

Mirage Resorts Holdings Pty Ltd

**Design & Construction By:**

Tension Span Structures Pty Ltd

**Project Location:**

The Spit, Southport

**Project Size:**

3,500 sq.m (37,674 sq.ft)

## Sails Across the Water

The Marina Mirage Gold Coast is a two storey shopping/restaurant/marina complex located on the Southport Spit at Seaworld Drive, Main Beach.

The central mall area of this complex is semi-covered with sail-like fabric structures.

The form of these structures comprises of ten sail-like fabric modules supported from a perimeter steel truss arrangement at roof level. The central mast of each sail structure is restrained at the top by wire ropes and the fabric sails while the base of the column is supported from wire ropes radiating from the corners of the perimeter truss.

Each sail module consists of two separate fabric elements each connected along the two sides of the perimeter truss and to the central flying mast.

There are three (3) type 'A' Sails of 20m height and seven type 'B' Sails of 16m height.

Each sail is supported on the lower edge by a tensioning tube and turnbuckle system, and the upper edges by galvanized strand wire ropes varying in diameter from 16mm to 24mm. Pretension loads vary from 100kN (10 tonnes) to 200kN (20 tonnes) in the edge cables.

The top of each mast is guyed by stainless steel cables of 13mm diameter for erection stability and permanent safety feature in the event of loss of fabric tension.



The fabric used throughout was an advanced fluoropolymer with a tensile strength of 90kN/m. The membrane fabric is guaranteed for 15 years.

The overall effect is one of yachts on the water, varying in profile and height as the viewer passes along the Southport Spit Broadwater.

The sails also provide shade without shadows internally, and highlight the shopping complex at night enhancing the shopping and resort experience.



1. Night view of Marina Mirage
2. Fireworks display
3. Day view of Marina Mirage

### TENSION SPAN STRUCTURES PTY LTD

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