

THE PROJECT: MERLION TOWER, SENTOSA ISLAND, SINGAPORE

The Task

Glenn Industries was engaged to design and construct an 11 storey - 37 metre high Merlion Tower on Sentosa Island - Singapore's tourist heart. The Merlion recognised world-wide as the icon of Singapore was to be stylised by Glenn Industries to reflect Singapore's progression as an economy and to modernise the icon for the 21st century.

The Solution

The Glenn Industries design was successful in winning the multi-million dollar commission from an intensely competitive field of 25 tenders from around the world, including the USA, Japan, Korea, and Singapore.

- Glenn Industries GRC system provided the construction solutions, to meet client requirements and unique specifications such as:
- A lightweight non-corrosive structure with a waterproof ductile skin with low annual maintenance
- Ability to incorporate a waterproof lighting system serviceable from within the body
- Integral colouring - providing a realistic surface texture and colour with minimum maintenance and colour fastness
- Ability to produce a monolithic appearance, which would not crack, rot or corrode
- A non-reflective surface to ensure there is no interference to communication and radar equipment used by ships in nearby shipping channels and aircraft at the nearby Changi Airport.
- Produced under the company stringent quality assurance standards



Glenn's engineering and computer analysis of the 37 metre high Merlion immediately revealed there were many construction and engineering difficulties that needed addressing. Glenn Industries design team engaged consulting engineers with specialist GRC knowledge and experience to engineer the structure.

The integrally coloured GRC matrix, spray applied to form the structural GRC skin, was produced under stringent quality assurance standards. The GRC matrix was metered and pumped by Glenn's purpose built machinery creating the structural GRC skin of the Merlion to the specified 25mm thickness.

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An integrally coloured sculpture coat was sprayed onto the surface of the GRC. This provided Glenn's artisans with a sculpting medium to produce 'life-like' realism by enhancing the shape, form and visual expression required. This realism was further enhanced with the application of specially developed masonry stains.

The Merlion's night appearance was dramatically enhanced by the use of specially designed fibre optic lighting, which was encased in waterproof stainless steel non-reflective light tubes. Glenn Industries was required to integrally cast and conceal the lights into the GRC skin to accentuate the seven types of scales forming the Mermaid type body of the Merlion.

The Result

The Merlion Tower is the premier tourist attraction of Singapore.

Two high-speed lifts take tourists from the basement of the Merlion to viewing platforms at the top of the tail, the mouth and the top of the head. At night the Merlion shines with a majestic glow of almost every colour of the rainbow, whilst laser beams shoot out eerily from its eyes in a spectacular laser light display easily visible from mainland Singapore.

The successful design and construction of the Merlion project was instrumental in Glenn Industries selection by the British Government backed New Millennium Experience Company (NMEC) to construct the Body Zone in London's Millennium Dome, the focal point of London's Millennium celebrations.

Similar Projects

The Body Zone, Millennium Dome, London
The Big Ram, Goulburn, Australia
The Big Prawn, Ballina, Australia

The Client

Singaporean Government

The Engineer

GRC – Rickard & Partners

