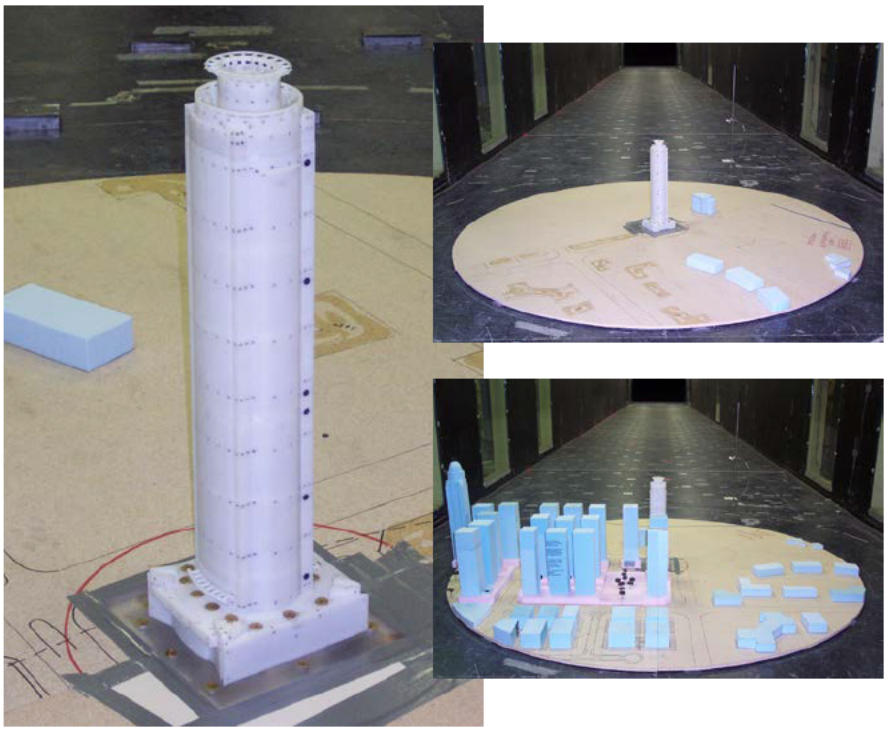
Tamani Marina Hotel, Dubai, UAE

Wind Engineering Study



Wind Tunnel Model

Client	Owner	Contractor
Khatib & Alami Consolidated Engineering Company	Al Rostamani Real Estate	Al Rostamani Pegel L.L.C.
Overall Dimensions (tower)	*Year Tested*	*Model Scale*
39.3m (L) x 36m (w) x 207m (H)	2003	1:400

The Project

When constructed, this tower was the tallest five-star business hotel in the UAE. The hotel overlooks the Arabian Gulf and is located in the centre of the commercial business hub of the Dubai Marina area next to Dubai Media City. The hotel is 55 storeys and includes a large entrance podium with many amenities for the business community.

The Wind Tunnel Studies

The wind engineering studies for the Tamani Hotel included the determination of overall wind-induced structural loads and responses, local cladding pressure loads and pedestrian wind environment. The test was carried out for two configurations of the surroundings, the existing and the proposed future surroundings.

A study of wind-induced cladding pressures was carried out for 579 measurement locations distributed over the entire tower and low-rise. The results included each of the proposed surroundings and upper bound values enveloping both set of results. Pressure results were also used to develop overall loads on the building by integrating the simultaneously measured pressure time histories. The pedestrian study examined 22 locations around the site including the podium level.

The Boundary Layer Wind Tunnel Laboratory

Western

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FSTB/ 329 /April 2009 / RTE
Last Printed: April 09, 2009