Puerto Triana, Seville, Spain

Wind Engineering Study

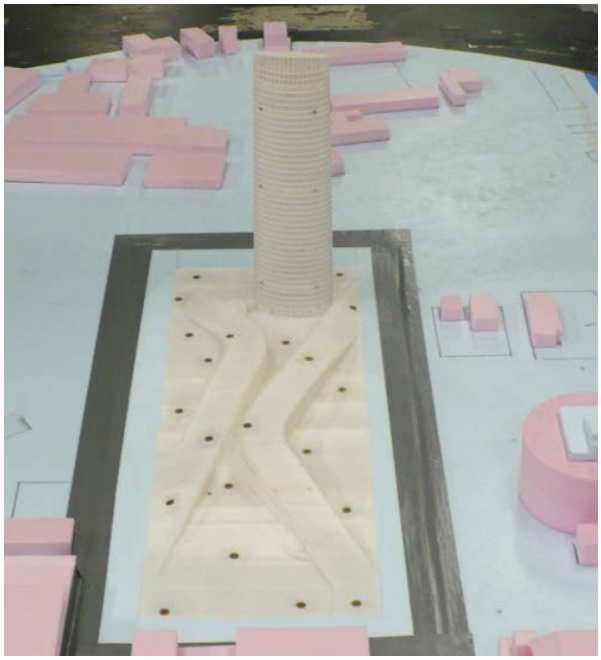

Image Credit: Pelli Clarke Pelli Architects

Client	Structural Engineer	Architect
Puerto Triana S.A.	Grupo Ayesa	Pelli Clarke Pelli Architects
Height	**Year Tested**	**Model Scale**
185 m	2007 & 2008	1:400

The Project

The Puerto Triana development in Seville, Spain consists of a 40-storey office tower together with a 4-storey low-rise complex containing both office and retail space. The site is located in the Cartuja Island and is bounded by Ave Inca Garcilaso, Ave Gonzalo Jimenez de Quezada, Ave Camino de los Descubrimientos and Avenue Lopez Pintado.

Both the tower and the low-rise complex will incorporate many sustainable features, such as a green roof at the top of the tower, a retractable canvas canopy between the east and west sections of the low-rise and sun shading features, lighting control devices and maximized solar orientation for the tower.

The Wind Tunnel Studies

The wind engineering studies for Puerto Triana included a study of the wind-induced structural loads and responses, local cladding pressure loads and pedestrian level winds. Structural load distributions on the roof level canopy were determined using the local wind pressures on the roof surface.

The study of the overall loads and responses were determined for the tower using the force balance technique.

A study of wind-induced cladding pressures was carried out for 353 measurement locations distributed over the tower and the low-rise complex.

The Boundary Layer Wind Tunnel Laboratory

Western

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