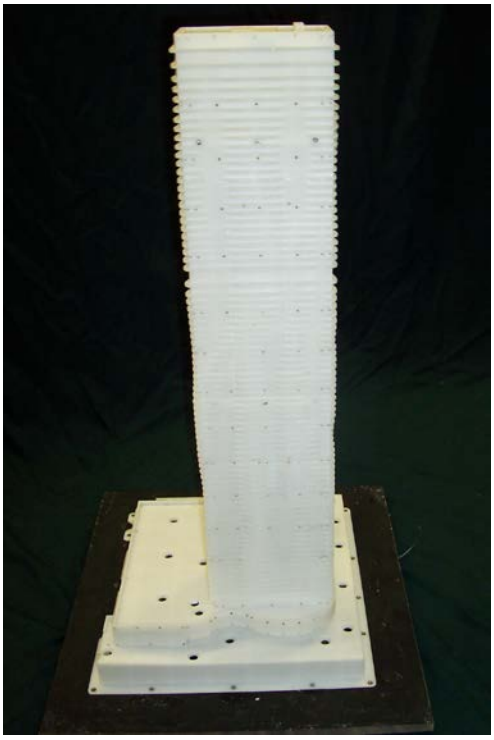
The Aqua Tower, Chicago, Illinois

Wind Engineering Study



Client	Structural Engineer	Architect
Loewenberg + Associates, Inc.	Magnusson Klemencic Associates	STUDIO GANG Architects
Height	**Year Tested**	**Model Scale**
822 feet	2006	1:400

The Project

The Aqua Tower in Chicago, Illinois consists of a single 83 storey tower rising to a height of 822 feet. The Aqua is located in the Lakeshore East development in the east part of the Chicago Loop and is currently the tallest building in the development. The glass façade and undulating balconies create a rippling effect that gives the illusion of waves. The tower is a mixed use building containing retail, hotel and residential units.

The Wind Tunnel Studies

The wind engineering studies for the Aqua included a study of the wind-induced structural loads and responses, local cladding pressure loads and pedestrian level winds.

A study of wind-induced cladding pressures was carried out for 574 measurement locations distributed over the tower.

The study of overall structural loads and responses was determined for the tower using the loads from pressures technique.

The pedestrian level wind study examined 24 locations around the tower.

The Boundary Layer Wind Tunnel Laboratory

Western

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