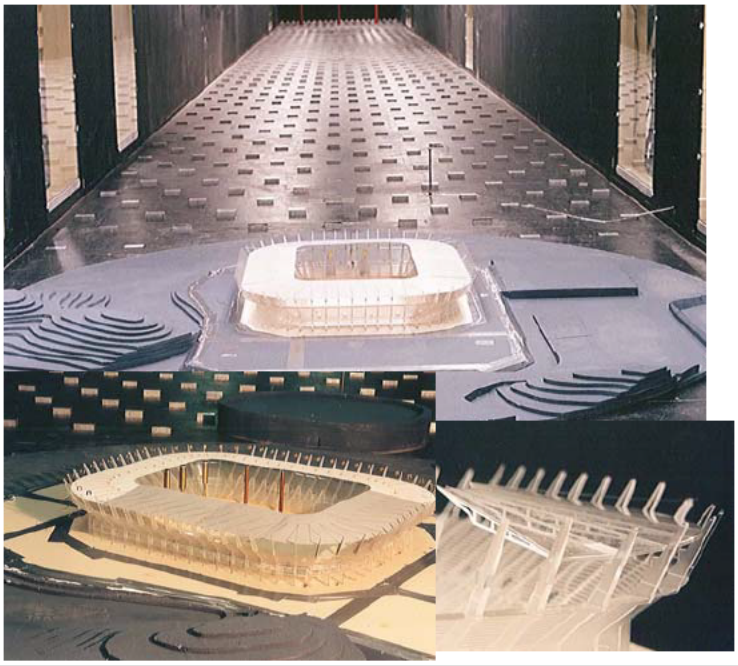
Munsu Cup Stadium, Ulsan, Korea

Wind Engineering Study



Client	Structural Engineer	Architect
Structural Design Group Co. Ltd.	Structural Design Group Co. Ltd.	POSCO Architects and Consultants.
Width, Length, Height	**Year Tested**	**Model Scale**
175.4m x 212.4m x 34.2m	1998	1:200

The Project

The Munsu Cup Stadium was built in 2001 for the FIFA World Cup. Located in a major industrial city, the Ulsan Munsu football Stadium contains both mechanical and environment-friendly imagery. The overall shape of the stadium is in the shape of a crown to symbolize that Ulsan will continue to develop. The stadium has a seating capacity of 44,466.

The Wind Tunnel Studies

The wind engineering studies included a study of the differential local cladding pressure loads and structural loads and responses of the roof.

The study of wind-induced cladding pressures was carried out using 142 pressure measurement locations distributed over selected elements of the roof on both the upper and lower surfaces. The units were moved and tested in different locations to give a total of 836 pressure locations.

A pedestrian level wind study examined 41 locations in the seating and around the site.

Half of the pressure model was modified to construct an aeroelastic model of the roof structure and tested to obtain loads and responses.

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