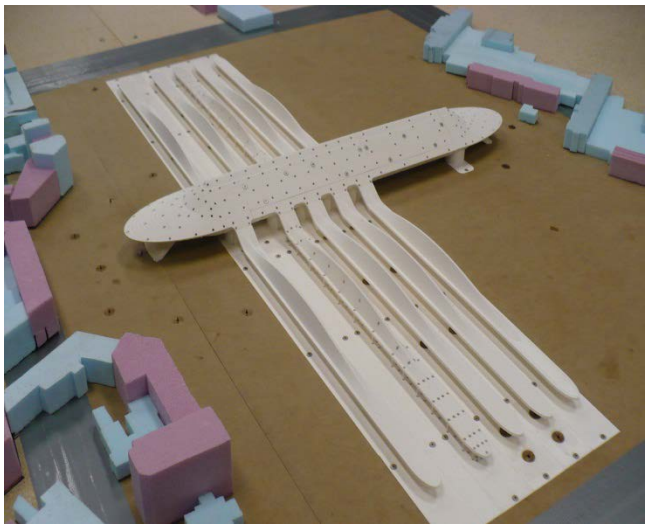
Gare de Mons, Mons, Belgium

Wind Engineering Study



Client	*Structural Engineer*	*Architect*
Santiago Calatrava LLC	Santiago Calatrava LLC	Santiago Calatrava LLC
Plan Dimensions	*Year Tested*	*Model Scale*
350 m x 240 m	2012	1:400

The Project

Gare de Mons is a railway station in Mons, Belgium. It includes 10 railway platforms extending from the Main Terminal.

The platforms are elongated canopies exposed to wind on the top and bottom surfaces. The platforms have cantilevered ends with expected significant dynamic responses. The main terminal is partially raised with column supports and cantilevered ends.

The Wind Tunnel Studies

The wind engineering studies for the Mons Railway Station included a study of the wind-induced structural loads and load effects, local cladding pressure loads and pedestrian level wind environment.

The study of overall structural loads and responses were determined using integrated point pressure data with consideration of the structural dynamics and with the Load-Response-Correlation Method to determine distributed design loads.

A study of wind-induced cladding pressures was carried out for 975 measurement locations distributed over the main terminal and the platforms.

A pedestrian level wind study was carried out using measurements from pressure probes.

An assessment for potential aerodynamic instability was carried out for the cantilevered end of the platforms.

Alan G. Davenport Wind Engineering Group

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