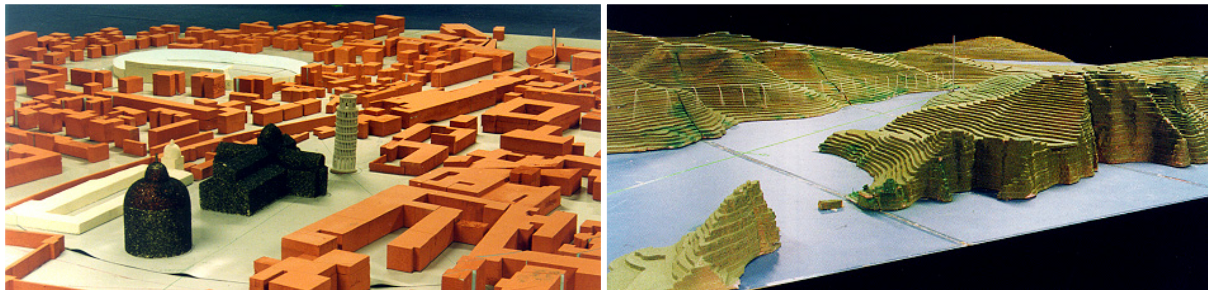


Wide Boundary-Layer Wind Tunnel



Main purpose of the Wide Boundary-Layer Wind Tunnel is the investigation of the aeroelastic behaviour of long-span bridges under the turbulent atmospheric wind at the location of erection



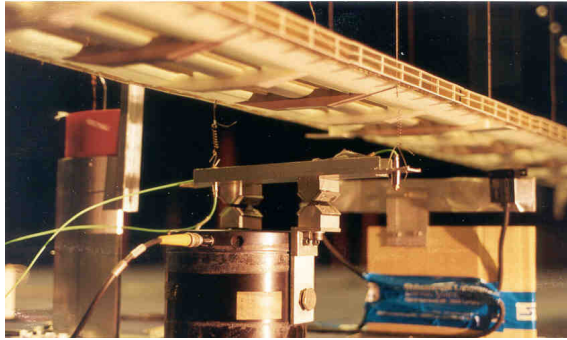
Various applications for wind related studies on bridges, built-in environments, buildings and landscapes

The 13.6 metres Wide Boundary-Layer Wind Tunnel has been purpose-built for aeroelastic tests with a complete model of e.g. long suspension bridges.

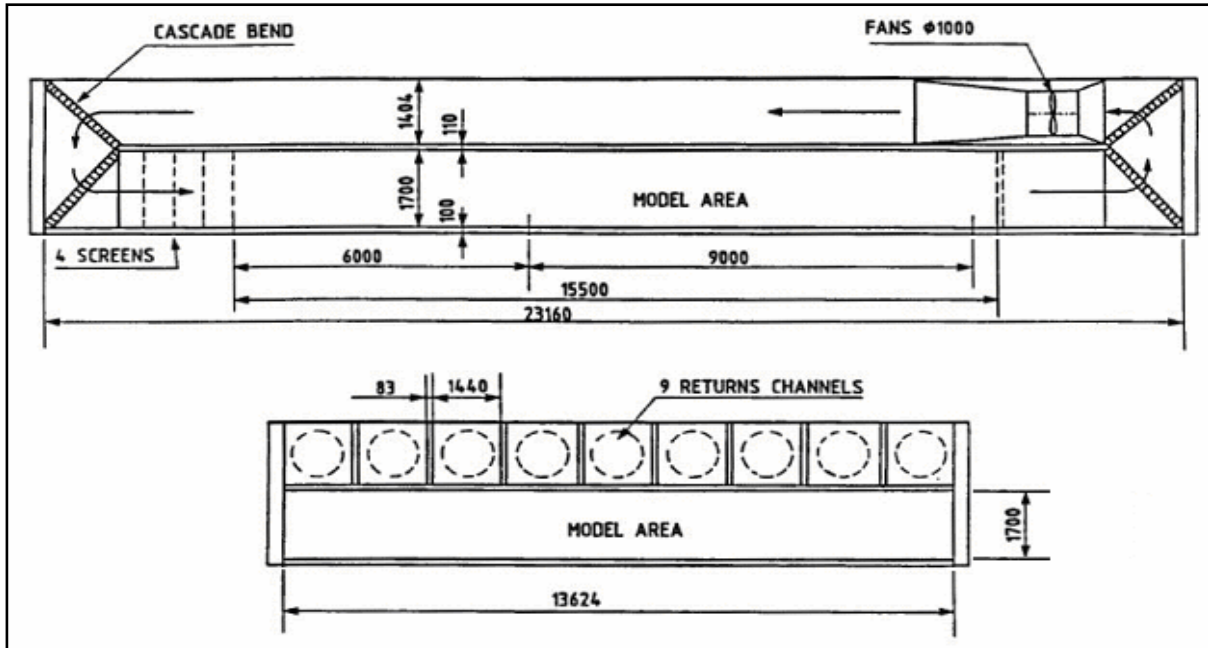
Beside bridge model testing the size of the wind tunnel allows for the investigation of wind flow across complex landscapes at large scale. The acquired information of wind characteristics is applied for bridge design, optimisation of wind farm layouts and has also been used for aviation purposes.

With the available size of the wind tunnel also larger parts of cities can be modelled to investigate the dispersion of gas plumes over the built-in environment. Simultaneously, the wind-induced loads on building structures can be studied as well.

Main Dimensions of the Wind Tunnel		
Length:	15.0	m
Width:	13.6	m
Height:	1.7	m



Special equipment tailored for the investigation of the complex response of long-span bridges to the approaching turbulent wind



Principle sketch of FORCE Technology's Wide Boundary-Layer Wind Tunnel (Wind Tunnel III)

Purpose	Equipment
Wind Induced Vibration	Optical measuring equipment for transient displacement measurements on aero-elastic models of entire bridge structures. Acceleration measurement systems for structural response monitoring in time domain. Various strain-gauge based measurement systems for structural response monitoring in time domain.
Smoke Dispersion	Mixing of buoyant gas, tracer gas and smoke to visualise and measure exhaust gas dispersion and environmental noxious gas concentrations.
Airflow Measurement	High-frequent hot-wire anemometry; Laser Doppler Anemometry (LDA).
Airflow Visualisation	Neutral buoyant bubble illumination technique; Smoke visualisation.



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Subject to changes without notice

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