HSB Turning Torso, Malmö, Sweden

Wind Engineering Study

Full-Scale Image of Tower

Force Balance Model (2001)

Pressure Models (2001)

Developer / Owner	*Structural Engineer*	*Architect*
HSB Malmö	Santiago Calatrava SA	Santiago Calatrava SA
Height	*Year Tested*	*Model Scale*
Overall Height - 190m	2001	1:400

The Project

The Turning Torso building consists of nine cubes twisting a total of 90° from bottom to top. Each cube is made up of five storeys with a single storey recessed below each cube - overall there are 54 stories. The lower two cubes are dedicated to office usage, the upper two floors to meeting space, while the remaining floors consist primarily of 147 residential units.

Upon completion, the Turning Torso held the distinctions of the tallest building in Scandinavia, the tallest residential building in the European Union and the second tallest in Europe.

The Wind Tunnel Studies

The high-frequency force-balance technique was used to determine overall wind-induced structural loads and responses on the Turning Torso tower.

Local cladding loads were measured at over 400 locations distributed over the building façade. The slenderness of the Turning Torso limited the number of locations that could be tested at one time. Consequently, four separate models were constructed and tested to provide sufficient coverage to describe the cladding loads over the entire building.

The Boundary Layer Wind Tunnel Laboratory

Western

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