Index Tower (formerly referred to as the One Central Park), Dubai, UAE

Wind Engineering Study

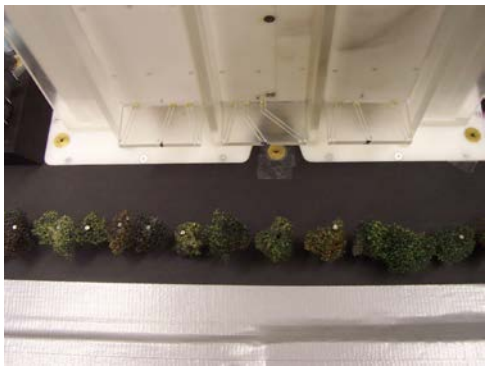

Image Credit: Foster and Partners

Client	*Structural Engineer*	*Architect*
Halvorson and Partners Structural Engineers	Halvorson and Partners Structural Engineers	Foster and Partners
Height	*Year Tested*	*Model Scale*
328m	2005	1:400

The Project

The Index Tower in Dubai, UAE consists of an 80-storey tower combining 40 levels of apartments with 25 floors of office space. The site is located on a corner of the International Finance Centre and is bounded by Skeik Zayed Road and Al-Adhid Road.

The mixed-use tower also houses shops, restaurants, a pool and health club. The parking complex will consist of six levels of underground parking.

The Wind Tunnel Studies

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

The study of overall structural loads and responses was determined using the force balance technique.

A study of wind-induced cladding pressures was carried out for 605 measurement locations distributed over the tower.

A flow visualization study was conducted to investigate the overall airflow characteristics and locate regions of flow separation, re-attachment and vortex formation.

The Boundary Layer Wind Tunnel Laboratory

Western

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