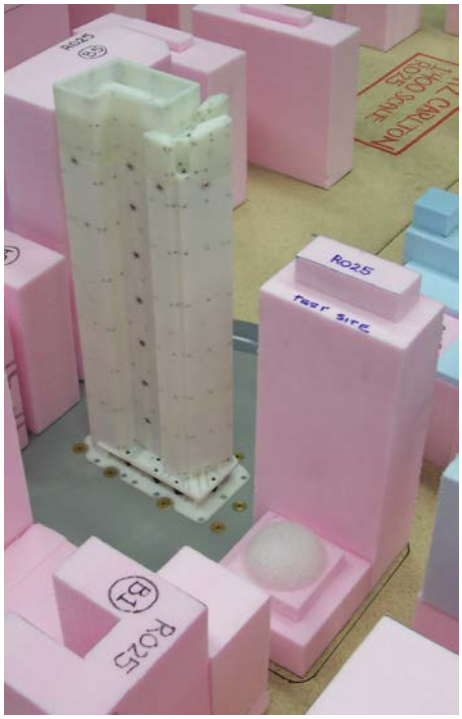
The Residence at Ritz Carlton, Philadelphia, PA, USA

Wind Engineering Study

Photo Credit: Bower Lewis Thrower Architects



Client	*Structural Engineer*	*Architect*
One Meridian Partners, LP	Thornton-Tomasetti Engineers	Bower Lewis Thrower Architects
Height	*Year Tested*	*Model Scale*
485 feet	2005	1:400

The Project

The project consists of a residential tower rising approximately 485 feet above street level. The project site is located on the south side of South Penn Square across from City Hall.

The tower features a series of balconies on the northeast and southeast corners of the tower. Roof-top courtyards are accessible at the 39th, 40th and 41st floors.

At ground level, the tower has an extensive canopy wrapping around the south and east faces of the tower.

The Wind Tunnel Studies

The wind engineering studies on the Residence at Ritz Carlton included a study of the overall structural loads and responses on the building, the local external and differential pressure loads and the wind speeds in and around pedestrian areas.

The Wind Tunnel Studies (continued)

The study of overall structural loads and responses made use of the force balance technique.

Information on local cladding pressures was determined for the project. Measurements were taken at 383 locations over the tower. Cladding loads were also determined for the parapet walls surrounding the deep mechanical wells on the roof of the tower.

The study of pedestrian level wind speeds investigated wind speeds at 25 locations around the project site. Measurements were taken at ground level, on top of the second floor canopy and in the courtyards near the top of the building.

The Boundary Layer Wind Tunnel Laboratory

Western

The Boundary Layer Wind Tunnel Laboratory
The University of Western Ontario
Faculty of Engineering, London, Ontario
Canada, N6A 5B9 Tel: (519) 661-3338 Fax: (519) 661-3339
Internet: www.blwtl.uwo.ca E-mail: info@blwtl.uwo.ca

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