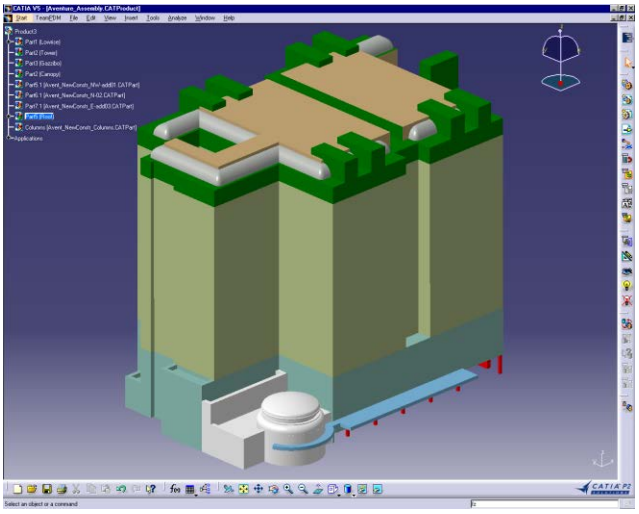
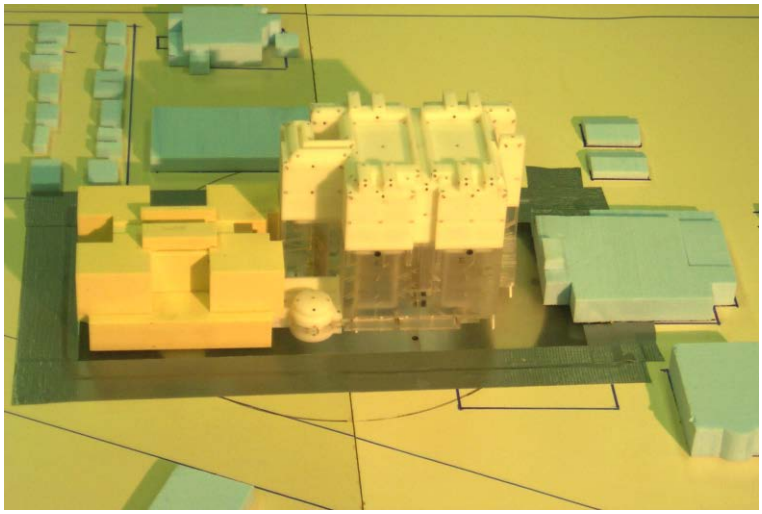
# Aventura Hospital & Medical Center Expansion, FL, USA

## Wind Engineering Study



Illustration



Pressure Model

| *Owner* | *Structural Engineer* | *Architect* |
|---|---|---|
| Aventura Hospital & Medical Center, Florida | Stanley D. Lindsey & Associates, Ltd. | Matt Harrell, Gresham, Smith & Partners |
| *Height: 2 options* | *Year Tested* | *Model Scale* |
| 195 ft and 141 ft | 2001 | 1:400 |

### The Project

The project consists of two parts: an existing structure about 94 ft tall to the south and the proposed expansion of the center to the north. There are two options for the proposed expansion; the 12-storey is 195 ft tall and the 8-storey option is 141 ft tall. Both options resemble a basic rectangular shape with many cut-outs and recesses. The overall dimensions of the footprint of the expansion are 175 ft x 267 ft. The 12-storey option has a roof top with curved side features, while the 8-storey option has a flat roof top. The main entrance at the southeast corner of the expansion, for both options, has a rounded top and an extended canopy.

### The Wind Tunnel Studies

Wind tunnel studies were carried out using a pressure model technique for both options.

Information on cladding pressures was determined. Measurements were taken at 498 locations for the 12-storey option and 330 locations for the 8-storey option.

Structural loads and responses on the 12-storey option were determined from detailed simultaneous pressure measurements and building dynamic properties.

**The Boundary Layer Wind Tunnel Laboratory**

Western

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