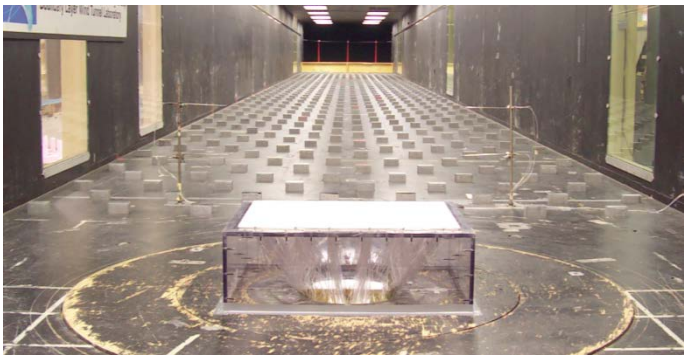
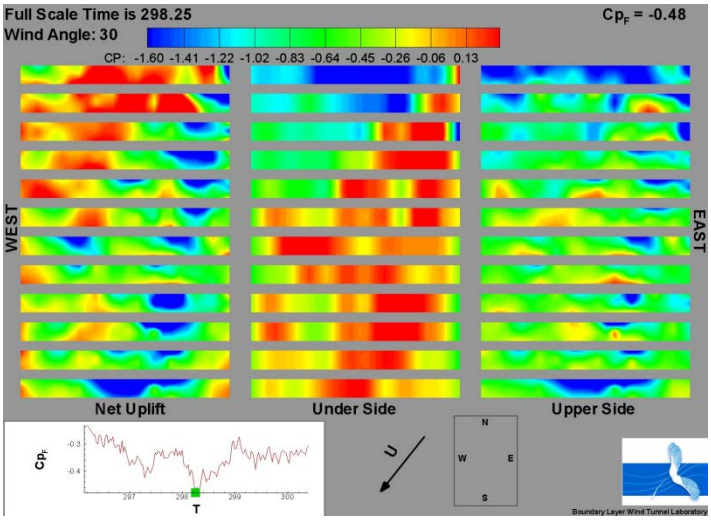
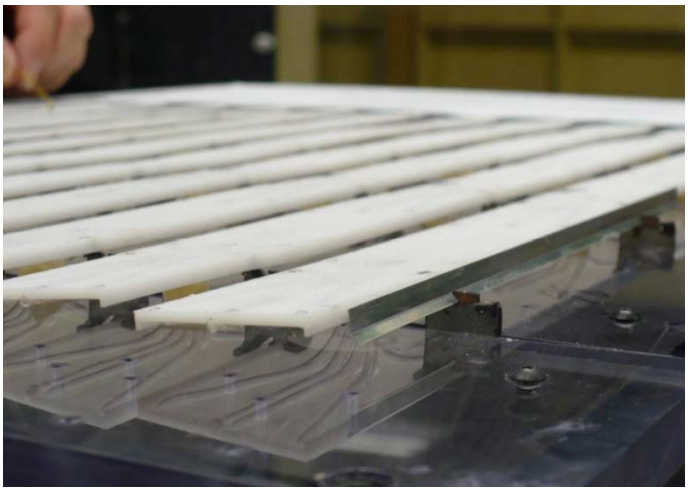
SunLink Roof-mounted Solar Array

Wind Engineering Study







Client	*Year Tested*	*Model Scale*
SunLink Corporation San Rafael, California	2007 to 2012	1:30

The Project

Extensive wind tunnel testing was carried out on SunLink Corporation's roof-mounted photovoltaic (PV) racking systems.

Test results from this study provide the basis for the Structural Engineers Association of California document 'Wind Design for Low-Profile Solar Photovoltaic Arrays on Flat Roofs', and are used in the proposed American Society of Civil Engineers design criteria for roof-mounted solar arrays.

The Wind Tunnel Studies

The wind engineering studies for the SunLink roof-mounted solar arrays used pressure models, with an array consisting of 12 rows, with 12 PV modules per row.

The effects of changing many PV array parameters were investigated, including panel tilt angle, panel row spacing, building height, array setback from roof edge, shrouding and shroud venting, panel chord length, and panel spacing above roof surface. Design recommendations were developed for SunLink which capture all of these factors.

The test results provided information on the variation of PV wind loads with effective array area, including both overall peak loads as well as zoning of the loads for different areas within the array and on the roof.

The Boundary Layer Wind Tunnel Laboratory

Western

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