WIND ENGINEERING OF TALL BUILDINGS

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A key part of the design of most tall buildings is wind engineering. The standard wind tunnel testing protocols to predict wind-induced structural loads, local pressures for the design of cladding, and the effects of the building on the ground-level wind environment were developed in the 1960s. Recent developments in tall building design with escalating heights, added architectural complexity, and novel structural systems have resulted in a number of challenges to wind engineering orthodoxy, and a re-examination of some fundamental assumptions is due. This lecture will cover the basics of wind engineering design and its limitations. These will be used to introduce areas of current and future research that will allow the next generation of tall buildings to be designed both reliably and economically, while adapting to a design environment increasingly focused on sustainability.