

WEBINAR ON

“WIND TUNNEL TEST TECHNIQUES FOR BRIDGES AND LONG SPAN STRUCTURES – THE TEST AND HOW TO CHOOSE?”

Wednesday | 25 November 2020 | 11.00 a.m. – 1.00 p.m.

SYNOPSIS

The determination of wind loading on long Span structures requires specialized wind tunnel testing and analysis techniques. Long-span structures are classed as any structure with an unsupported span of more than 25m, which may include bridges, sports facilities, transport infrastructure, logistics and maintenance facilities, leisure and entertainment facilities. In addition to their long span, they are also often characterized by low natural frequencies and low mass, which makes them potentially prone to significant dynamic excitation due to wind.

The bridge and long-span roof structure specialists at Windtech Consultants will highlight the different methodologies available to investigate the dynamic wind actions on these structures and which method is most suited to which type of structure.

This live webinar will present on the following:

- An introduction to the various effects of wind on Long-span structures
- Wind tunnel testing and analysis techniques
 - for long span bridges
 - or long span roofs (eg Stadiums)
- Case studies will also be discussed to show the value of various design tools presented.

Learning Objectives:

- When to consider the effect of wind on long span structures
- The various analysis and testing techniques available and which type should be used of a given structure
- Aerodynamic optimisation and mitigation strategies.
- Monitoring/measuring the health and dynamic performance of structure

Dr. NICHOLAS TRUONG



Qualifications and Professional Memberships

- PhD(Oxford), B.E.(Univ of Qld)
- Corporate Member, Engineers Australia (MIEAust)
- Member, Australasian Wind Engineering Society (AWES)

Appointments

- Standards Australia Committee BD6-002 Wind Actions on Structures.
- AWES Committee for the Wind Loading Handbook

Experience

Dr Nicholas Truong is a professional engineer with over 15 years of consulting, research and development experience in the field of fluid dynamics and wind engineering. Nicholas' is responsible for Windtech's ongoing innovation, research and development program to maintain Windtech's position as a global leader in the field of wind engineering. His particular interest and experience is in the use of wind tunnel testing and computational fluid dynamics to study and design the response of unusual structures under wind loading, as well as in the field of air and liquid fluid-structure interaction mechanics.

Nicholas has undertaken and supervised wind engineering studies including wind tunnel investigations for various high-rise buildings, large-span roof structures, stadiums, airports, statues and masts around the world. These include numerous landmark developments. Nicholas is also a leader in the testing and analysis of wind loading and aerodynamic stability of bridges, including cable-stayed, arched, pedestrian and suspension bridge designs. This includes the initial design analysis during the concept design phase to assess aerodynamic stability. He also oversees the development and testing of static and aero-elastic bridge testing to determine the aerodynamic performance of the bridge.

Wind climate analysis is a critical aspect in the accurate analysis of wind loading on any structure. Nicholas also leads the climate analysis group at Windtech, who provide detailed analyses of wind speed and directional probabilities as well as seasonal variations in the case of thermal comfort studies. His analysis includes both micro and macro climate analysis.

Prior to joining Windtech, Dr Nicholas Truong was a research fellow and part-time lecturer at the University of New South Wales studying fluid-structure interactions and from time to time supervise research students in the area of fluid mechanics. His research focused on the: experimental testing of gas and liquid flows, design of experimental and testing equipment and numerical analysis of large data sets.

Registration Fees (effective 1st August 2020)

IEM Members : RM 15.00 | IEM Non Members : RM 70.00

CPD Hours : 2.0 | CPD Ref No : IEM20/270/T(w)

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