

WIND DESIGN WORKSHOP - LOW & MEDIUM RISE STRUCTURES

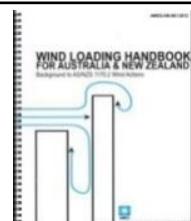


DR JOHN HOLMES *BSc(Eng) Ph.D FIE (Aust)*

- Leading consultant on Wind Loads and Actions throughout the world and in Australia.
- Chairperson of BD6/2 - Wind Actions for Standards Australia.
- Involved in writing the various editions of Australian Standards AS1170.2-1989 and AS/NZS 1170.2 -2002 & 2011.

Recommended Text:

**Wind Loading Handbook
for Australia & New Zealand**
(2012)



WORKSHOP SUMMARY

This one day workshop will address the key aspects of basic wind design as per AS/NZS 1170.2-2011 and outlined in the session headings below.

This wind course is primarily aimed at engineers who will design structures less than 8 storeys in height such as smaller office buildings and 3 storey walk ups.

If engineers wish to analyse tall structures under dynamic loading (eg < 1 Hz, cross wind responses, turbulence intensity and damping) then we would refer them to our ETIA course "Wind Design Workshop – Tall Structures".

Sessions provide worked examples, tutorial exercises and solutions.

PROGRAMME (8.30 - 9.00 Registration)

9.00 - 10.30 Session 1

- WIND ACTION THEORY

- Wind is by far the most crucial loading in Australia (once dead and live loads have been addressed). Its complexities and unusual behaviour require a more detailed analysis than that required for permanent and imposed actions.
- The basic principles of wind design as well as the development of this Standard over many years.
- Requirements of the BCA and its relevance to AS/NZS1170.2 - 2011.

10.30 - 11.00 Morning Tea

11.00 - 12.30 Session 2

- INDUSTRIAL WAREHOUSE BUILDINGS

- Wind design of Steel Framed Industrial Buildings (eg Portal Frame structures) eg warehouses and factories on the edge of urban areas.
- Key parameters to be addressed include:
 - (a) Location (b) Terrain (c) Topography (d) Building Dimensions
 - (e) Building Orientation (f) Regional Wind Speed
 - (g) Aerodynamic Shape Factor (h) Pressures on Doors and Windows
- Tutorial Exercise

12.30 - 1.30 Lunch (Provided at Venue)



1.30 - 3.00 Session 3

- MEDIUM HEIGHT OFFICE BUILDING (L-Shaped + Shielding) - SINGLE STOREY HOUSE (on cliff top overlooking sea)

- Two different case studies:
 - a) The first example (Ex 5.11) is an 8 storey office building with nonrectangular shape and shielded by other surrounding buildings. The example is located in Canberra (but as usual all examples can be applied anywhere in Australia or NZ).
 - b) The second case (Ex 5.2) is a single storey home located on a cliff overlooking the sea (in Victoria). Parameters which come into play for this example include the 'Hill Shape' multiplier and design loading for windows and roof cladding and battens.

- Tutorial Exercise

CALCULATORS REQUIRED

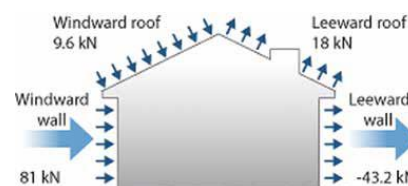
3.00 - 3.30 Afternoon Tea

3.30 - 5.00 Session 4

- LARGE SIGHT SCREENS & ADVERTISING HOARDINGS - PITCHED FREE ROOFS

- Two different case studies:
 - a) The first example (Ex 5.8) is the design of a sight screen at a cricket ground 6m x 6m x 5m (similar to the design of a large advertising board) which is located in north QLD. Unique wind factors include net porosity factor, normal and oblique wind directions, eccentricity of loads and serviceability limits.
 - b) The second case (Ex 5.9) is the design of a pitch free roof over a storage area. The Tasmanian structure addresses parameters such as lag distance and changes in terrain leading up to the structure (which impact on the M_z , cat value). It evaluates various situations particular to pitch free roofs (eg empty zone vs blocked zone) under the roof and how the net pressure coefficients vary. Frictional drag forces are also examined.
- Tutorial Exercise

5.00 - 5.15 Certificate of Attendance & Feedback sheets



**Class sizes limited
to max.15**

**Live streaming
option available**

COURSE COST

- 1 day course – \$780 pp

DATES, VENUES & REGISTRATION

- Registration form (back of catalogue)
- Visit our website www.etia.net.au

FURTHER INFORMATION

- Office (02) 9899 7447
- Mobile 0413 998 031
- Email registrations@etia.net.au