



**WIND
ENGINEERING
SOCIETY**

Newsletter

❖ Ramblings

It's time for change. Every two years following the AGM the society elects a new Chairman. Following the AGM this year, our Chairman will be Paul Freathy who is a well known wind engineering consultant who fairly recently teamed up with Nick Cook to establish Anemos Associates Ltd. They have recently expanded the consultancy and moved to new offices, so business must be looking up. We welcome Paul as Chairman as he has been an active member of the society for many years including chairing the recent strategy review. He is also well known to you as our Conference Organiser, a task I have now exchanged with him. I am sure you will join with me in wishing Paul every success as Chairman of the Society for the next two years during which we hopefully will continue to grow and see good attendance at our technical meetings. The way that the Society is organised is that I become Vice Chairman for one

year before standing down when we seek new blood who will become Chairman in two year's time.

I am not sure why I have accepted the role of organising the next WES Conference in 2004 as conference organising seems to have many pit falls. Two recent events illustrate this in the organisation of the 11th ICWE to be held in Lubbock, Texas in June. Who could have guessed in the early stages of organising the conference that the SARS virus would prevent/discourage some delegates from attending and it is even rumoured that some other delegates are refusing to attend as a protest about the recent US action in Iraq.

Conferences have critics as some people do not find this method of interacting useful, but others do and it is necessary for scientists to report, first-hand, their activities and to defend what they have done before their peers. But I would agree that we do not need to do this every few months.

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❖ Snippets

- **The Glasgow Science Centre Tower.** You may recall a technical meeting some two years ago which included a presentation on the Glasgow tower. It is 105 m high and mounted on a thrust bearing enabling it to rotate to face into wind. However, last year a failure of the mechanism caused it to jam. Work is now in hand to overcome this problem. On the basis that troubled structures have more popular appeal, e.g. an otherwise little known tower at Pizza and a pedestrian bridge across the Thames, we can now expect large numbers to watch the tower in Glasgow go around. This report did remind me of our own 6 m cube that can rotate but only when we unlock the mechanism. But the locks can fail, and one morning following a storm we were greeted by a freely rotating cube.
- **The Institution of Civil Engineers Annual Conference.** The ICE annual conference '*Developing a sustainable infrastructure – a challenge for civil engineers*' will be held at Queen's University, Belfast from 18th to 21st June 2003. The Wind Engineering Society is represented by our incoming Chairman Paul Freathy who will present a paper 'The effect of wind on the urban environment' in the session on 'Sustainability of structures against natural hazards'. More information can be found at www.ice.org.uk.

❖ Committee Report

The Committee met on 5th February 2003 in Prof. Chris Baker's office at the University of Birmingham. The Committee meeting was well attended, which was encouraging for an out-of-London meeting.

Items of interest to the members included discussions with I Struct E on publicising WES technical meetings. For publicity purposes, we have produced a poster sized version of the information leaflet on the society which can be used at meetings and other events. Discussions on WES strategy included looking at the path to achieved chartered engineer status for members of the society; an engineering council discussion document is expected soon. Matters relating to IAWE codes and standards, EU Cost action C14 and ISDR were discussed at committee. Tom Whyatt and Brian Smith were formerly asked to prepare the 8th Scruton lecture to be held on 7th November 2003, and a sub committee was formed to publicise this event. The timetable for the election to the committee to replace members whose term of office ends at the AGM was agreed with the results of any elections that are necessary being made at the AGM.

❖ ICE Membership

The WES Committee has discussed in the past, and in the recent context of the strategy report the way of offering members support in obtaining ICE membership. The announcement in the following link http://www.ice.org.uk/navigation/index_ice.asp?page=../ice/joining/pr_career_appraisal_03.asp may therefore be of interest to members. It describes two new routes to membership which are to be introduced in February.

Eunice Waddell

Group Coordinator Engineering Division

❖ Meeting Report

WES Technical Meeting on Vehicle Aerodynamics, held at Birmingham University on 5th February 2003.

Despite recent experiences of the catastrophic effects of heavy snow on land vehicles, and a forecast of the possibility of snow, some 25 people braved then weather to attend the meeting. There was good representation from the motor industry, though at least two expected groups were put off by the weather forecast.

Angus Lock outlined the importance of cross-wind stability and described some recent work at MIRA on vehicles in yawed flows. Of particular interest were the results of Powerflow CFD simulations. This method is inherently time-dependent, and should thus be well suited to linking the CFD and vehicle dynamics simulations. The method was also shown to give good graphical illustrations of the complex flow structures and separations that occur in yawed conditions. The simulation results showed close agreement with wind-tunnel values of drag coefficient, but gave a rather poor prediction of lift, which is unfortunate, as this has been found to be of critical importance in cross-wind stability. In view of the rapid improvements that have been made in the prediction of drag, it seems likely that lift prediction will similarly improve.

Geoff LeGood described the role of aerodynamics in the vehicle design process, and showed how this involved a great deal more than just drag coefficients and smoke visualisation; a technique that looks impressive in photographs, but plays little part in serious aerodynamic studies. Drawing on his considerable experience in the motor industry, Geoff described how factors such as vehicle stability, wind noise, cooling flows, water flows on the glass and soiling are all part of the aerodynamicist's remit. Some idea of the importance that is now attached to aerodynamic development may be gained from



Geoff's estimate that some 2500 hours of wind-tunnel testing may be involved in the development of a new design.

Adrian Skea described work at MIRA on the linking of CFD with cooling system and engine simulation tools to obtain a full thermal representation of the vehicle. As Adrian explained, this is a useful technique to assist with optimising a number of parameters such as the location of thermally sensitive components, cooling pack arrangements, and fan and heat exchanger selection. The simulations include the influence of engine loading and environmental conditions. Clearly such integrated simulations can enhance the design process, minimise the amount of physical testing needed, and reduce the development time for new models and variants. Reducing development time is generally regarded as being of major importance in terms of gaining competitive advantage.

R H Barnard

❖ Corporate Members

The list of Corporate Members is growing and we would like to encourage this by informing members in this newsletter of the services offered by our Corporate Members.

We welcome ANEMOS as a new corporate member; ANEMOS provide an extensive wind engineering consultancy service including wind-tunnel model testing, desk studies of extreme winds, failure investigation and expert witness work. They also develop and sell software relating to wind engineering.

They have recently moved to a new address in Hemel Hempstead at Charlston House, 13 High Street, Hemel Hempstead, Herts HP1 3AA and contact details can be obtained from their web site at www.anemos.co.uk.

Other corporate members please email me information that I can include in the next newsletter.

❖ UK WEB SITE

Reminder: To make it easier to contact the Wind Engineering Society we now have a domain name of ukwes.org so you can get to our web site through www.ukwes.org or you can email the society by putting a name in front of @ukwes.org. At the present time all emails will come to Roger Hoxey to be forwarded or dealt with

❖ From the Structural Engineer

Verulam 18th February 2003 wind loads.

Prof. Nick Cook writes from St.Albans, Herts:

How to tell if you have the current version of BS 6399-2:

The current version of BS 6399-2 is BS 6399-2:1997 with Amendment 1 and Corrigendum 1. The title page says 'Corrected and reprinted June 2002'. However, several people have reported to me that the shrink-wrapped package sent to them by BSI included Corrigendum 1, but not Amendment 1.

The way to tell if you have an up-to-date current version is:

1. All pages should be in single column, with the final page (References) as p 117.
2. Amendment 1 is included if new Table 5a appears at the top of p 32.
3. Corrigendum 1 is included if Fig 40 on p 90 shows the key for duopitch roofs (and not a duplicate of the hip-roof key in Fig 41).

I thank Professor Cook for pointing out this discrepancy, and for his advice, and trust that the guidance given will prove useful to members who have bought or are about to purchase the code.

With acknowledgement to I Struct E, The Structural Engineer Vol 81 No.4.

And more recently Research update: wind 15 April 2003.

Extreme wind speeds in the UK. Nicholas Cook, of Anemos Associates Ltd describes how the new wind speed maps have made use of recent weather data.

With acknowledgement to I Struct E, The Structural Engineer Vol 81 No.8.

❖ IAWE News

The 11th International Conference on Wind Engineering will be held in Lubbock, Texas from 2nd – 5th June 2003. This is the main event of the International Association of Wind Engineers and is held once every four years. The 10th ICWE was held in Copenhagen in 1999. Details of the 11th ICWE can be found on the Texas Tech website www.icwe.ttu.edu.



The following papers with UK authors appear on the web site.

❖ Papers by WES members for the 11th ICWE

Listed here are just some of the papers with an author who is a member of the UK Wind Engineering Society. If you have written a paper that I have not included, please send details. The full papers can be viewed on the conference web site.

Flow structure around a desert valley, Brian Garvey, Ian Castro, Giles Wiggs, Joanna Bullard.

Vortex shedding from tapered flat plates: aspect ratio effects, Ian Castro & Lee Watson

Unsteady wind loading, Sterling, Baker and Hoxey

Calibrations of closed-form solutions of fatigue life under along-wind loading, A.P. Robertston, J.D. Holmes, & B.W. Smith.

Static Pressure Fluctuations and Vorticity in the Atmospheric Boundary Layer Close to the Ground, Hoxey, Quinn, Richards.

Quasi-steady theory and point pressures on a cubic building, Richards and Hoxey.

Turbulent event sequencing in the atmospheric surface layer, Richards, Baker and Hoxey.

Computational Wind Engineering for Real Buildings, Dr Garry Palmer, Dr Bernardo Vazquez, Graham Knapp, Dr Nigel Wright.

Natural ventilation in a 6m cube – full-scale & CFD investigation, T. Yang, N.G. Wright, D.W. Etheridge, A.D. Quinn.

Large Eddy Simulation of flow around a circular cylinder, Kai Fan Liaw, Nigel Wright, John Owen, Dongke Sun.

Measurements of the Cross Wind Forces on Trains, Baker, Jones, Lopez-Calleja, Munday.

The performance of a Roof-Mounted Natural Ventilator, Shea, Robertson, Aston, Rideout.

Comparison of Full-Scale and CFD Results for the Silsoe 6m Cube, Graham Knapp, Dr Nigel Wright, Dr John Owen.

CFD modelling of the Askervein Hill, Paul Strangroom, Nigel Wright.

Acceleration Response of a Medium-Height Building to Wind-Gust, Jónas Snæbjörnsson, Erik Hjorth-Hansen, Ragnar Sigbjörnsson, Tom Wyatt.

How Have Full-Scale Measurements Improved the Reliability of Wind-Loading Codes?, Hoxey, Robertson, Richards.

Numerical simulation of air flow around free-standing walls using different k-e models, Badrana, O.O, Davis, J.B, Holdø, A.E.

❖ Actions on the Strategy Report

The Strategy Report, presented at last years AGM covered the following areas: Society objectives, Membership composition, Services to members, Technical activities, External liaison. This first report on actions looks at Services to members.

Services to Members

The frequency of the Newsletter should be raised to at least 3 issues per year.

Advertising in the Newsletter of relevant products and job vacancies should be actively encouraged to provide a useful service to members.

Advertising from Corporate Members of the Society should be accepted in the Newsletter free of charge – subject to editorial approval of number and size of adverts.

Articles relating to commercial products, projects, processes and current research should be encouraged as providing a useful source of information, subject to Editorial review to exclude excessive ‘plugging’, for which an advertisement is more appropriate.

Actions

We are doing this, aiming for 4 newsletters a year to coincide with technical meetings of the Society.

We have done this occasionally, e.g. with a US vacancy, but this needs more input from members

Under consideration - probably secondary to next recommendation about articles

Articles requested but limited response as yet. A news section on Corporate Members has now been added to the newsletter.



An abstract service should be included in the Newsletter.

Increased use of electronic distribution of material should be encouraged and the web site developed to provide a resource of stored information available to members. More general information should be freely available for download to anybody.

The routes to Chartered Engineer status should be tested with a group of interested members and their experience used to provide guidance to others – perhaps with senior members of the Society acting as occasional mentors to younger members.

Titles, authors and some abstracts have been included. Permission from journals to include abstracts has been granted.

Information available on the web site which can now be accessed through www.ukwes.org. It is intended to use the web site for the next conference.

Some information presented in this newsletter. If you have information/experience please let us know.

❖ About WES

The current committee is as follows. Contact details can be obtained either from the WES website or from Eunice Waddell at the ICE.

Chairman	Paul Freathy (from 7/5/03)
Vice Chairman	Roger Hoxey
Hon. Sec/Treasurer	John Wills
Chairman, Research Cttee	Brian Lee
Chairman, Strategy Cttee	Paul Freathy

Members	Chris Baker
	Dick Barnard
	Gordon Breeze
	Roger Gawthorpe
	Brian Smith

Co-opted members	Andrew Allsop
	Ian Castro

Structures & Building Board representative	Tom Wyatt
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ICE Support

Our contact at the Institution for all administrative support is Eunice Waddell. She can be contacted at

Tel: 020-7665-2238

Fax: 020-7799-2238

e-mail: Eunice.Waddell@ice.org.uk

WES website www.ukwes.org

❖ Forthcoming WES Meetings

7 May 2003, AGM and evening meeting at ICE on Urban Wind.

10 September 2003, University Day, an afternoon meeting at ICE with student presentations which are reviewed and a prize awarded.

7 November 2003, 6 p.m., 8th Scruton Lecture at ICE. Tom Wyatt and Brian Smith will be presenting the Scruton Lecture jointly.

3rd February 2004, High Intensity Winds. We are planning a meeting to discuss 'high intensity winds'. These range from tornadoes to hurricanes as well as the more complicated downburst or microburst.

12th May 2004, AGM and evening meeting at ICE.

15th – 17th September 2004, Proposed WES UK Conference at Cranfield University. Details to follow.



❖ Other Forthcoming Conferences

2003

2nd International Conference on Fluid-Structure Interaction Cadiz, Spain, 24-26 June 2003.

2004

5th Bluff Body Aerodynamics Symposium
Ottawa, Canada

8th International conference on Flow-Induced
Vibrations, Paris, France 5 – 9 July.
www.ladhyx.polytechnique.fr/fiv2004

❖ Contact Point

Contributions and responses to:



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Please help to fill this space by contributing news clippings, people news, details of key projects or facilities that might interest others or notices of new books and meetings.
In the newsletter we would like to include services offered by our corporate members.