



# News

Your quarterly insight into all things that directly affect the Society and all those involved with it

## Profile of the new SEE Chairman

**Mervyn L. de Calcina-Goff, ASIS CEnv Hon.FSEE FRPS**

Mervyn joined the SEE in 1989 and served on Council for a number of years. He became a Fellow in 1997 and an Hon.Fellow in 2010. The past four years he has served as Honorary Treasurer.

In the late 1960s Mervyn joined the Order of the Society of St Francis nursing children with disabilities at Alnwick, Northumberland and became a Companion of the Society of St Francis in 1968.

In 1969 he went to Hawker Siddeley Aviation at Hatfield in Hertfordshire as a Photographic Research Engineer. He next became involved with medical imaging with a short term appointment with the Medical Research Council at the Clinical Research Centre at Northwick Park, Harrow, in North London.

Mervyn became a Senior Medical Photographer in the Retinal Diagnostic Department at Moorfields Eye Hospital in London and then as a Medical Scientific Officer at the Neonatal Research Unit at the London Hospital Medical School af-

ter which he returned, in 1982, to the Clinical Research Centre in Harrow as a Senior Scientific Officer as Head of Thermography, in the Thermal Biology Group.

### RESEARCH WORK

Whilst with the Medical Research Council at Northwick Park he undertook many other thermal imaging research programmes including screening techniques for neuropathy in diabetes and for inherited genetic disorders, abnormal vascular and metabolic factors in HIV infection and peripheral vascular diseases.

Early on his work included investigations into the spread of infections in hospitals and laboratories. This led to the development of the KI Discus method for measuring the containment efficiency of equipment used to safely handle micro-organisms and hazardous chemicals. This has become an internationally used method and is written into a number of national and international standards.

In 1990 Mervyn moved from the Medical Research Council at Northwick Park and became the Deputy Director and then Director and Research Fellow at the Thermal Biology Research Unit, King's College, London where his duties included supervising PhD students, together with conducting thermal biology and physiology research.

Between 1996 and 1998 he was Head of Centre and Director of the new Biomedical Centre at Cranfield University and in 1999 Mervyn became an Executive Director and Company Secretary of the Fravalet Company Limited.

### CONSULTANCY POSITIONS

Mervyn has held Honorary Consultant positions in the Restoration of Function and Appearance Trust (RAFT), Mount Vernon Hospital Northwood and in the Thrombosis Research Institute in the University of London. He was the Research Planning Advisor to the British School of Osteopathy. He is also



a registered teacher of the University of London and for a number of years was an external examiner at the University of Westminster.

Mervyn became an Accredited Senior Imaging Scientist (ASIS) of the Royal Photographic Society in 1995. At the same time he was awarded a Fellowship of the Society (FRPS) in Science but had, in fact, already achieved a Fellowship in Photography applied to Scientific Purposes in 1990. In 1995 he was awarded the Fenton Medal and Honorary Membership of the Royal Photographic Society (for outstanding contributions to the Society and Imaging Science).

Mervyn became a Freeman of the City of London in 1993 and a Liveryman of the Worshipful Company of Scriveners in 1995 and a Freeman and Liveryman of the Worshipful Company of Painter-Stainers in 1999. He became an Esquire of the Venerable Order of St John, The Priory of England and the Islands in June 2003.

## The SEE attends three exhibitions

The Society has so far this year maintained a presence at three exhibitions:

- The EIS Instrumentation Exhibition at Silverstone on 23 February;
- Sustainability Live at the NEC on 20-22 April; and
- The 3C 2010 Exhibition on 27-28 April at the NEC.

## New Council takes office at annual meeting

The 31st Annual General Meeting of the Society was held on 18 March 2010 at the Manor House, Buntingford, and was attended by 13 members.

The minutes of the meeting containing the Chairman's and Treasurer's Reports, together with the audited accounts are available from the SEE Secretariat on request. In addition

the Chairman's report is available on the SEE website. The full Council now consists:

- Chairman:** Professor Mervyn de Calcina-Goff, CEnv, Hon.FSEE  
**Vice-chairman:** Mr Geoff Parrish, FSEE  
**Hon.Treasurer:** Mr Steve Burnage, CEng, CEnv,FSEE  
**Council and Vice-president:**

Mr Neil Barker, CEng, CEnv,Hon.FSEE  
**Council and Vice-president:** Mr David Richards, CEng, CEnv, Hon.FSEE

**Council:** Mr Colin Weetch, IEng, MSEE; Mr Andy Tomlinson, CEng, Hon.FSEE; Mr Graham Couser, CEng, CEnv, MSEE; Mr Peter Vincent, IEng,MSEE.

## HOT TOPIC: Structural Dynamic Comparison Using Modal Analysis Techniques

Complexity	Structure		Model
 Increasing complexity	Time histories FRFs		Spatial parameters Mass stiffness & damping Matrices
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At some point in a development programme the need may arise to compare the structural dynamic behaviour of two structures, whether they are represented as a mathematical model or a physical entity. For many applications, structural comparison may be needed at almost every phase of a development programme ranging from initial design model verification, through structural development to operational use. Structural comparison may also form a crucial part of the assessment process necessary to demonstrate structural integrity, validity of the qualification process and overall safety.

To undertake a structural dynamic comparison there is a need to establish a comprehensive strategy and a framework to evaluate the structural response characteristics. This strategy is usually based upon consideration of the general dynamic behaviour of each structure being compared.

Structural dynamic responses involve a complex interaction of a range of variables, where small differences have a large effect. Therefore, it is not usually considered possible to specify a definitive list of acceptance criteria to meet all eventualities. However, it is possible to identify a range of dynamic parameters which can be used to establish a broad picture and an

understanding of the degree of similarity. Many of these parameters are quite sensitive and small differences could be interpreted as structural difference when they actually lie within a normal manufacturing distribution. Minimising the risk of such misinterpretation of realistically similar structures requires detailed knowledge and pragmatic application of the assessment criteria.

A new document has been generated for inclusion in DefStan 00-35 which provides guidance on best practice to be followed to allow the comparison of the dynamic response characteristics of either two physical structures, a physical structure with an analytical model or two analytical models. The document utilises best practice modal analysis and comparison techniques to evaluate the degree of structural dynamic similarity.

The aim of the Specialist Topic Group is to identify best practice in the use of Structural Dynamic Comparison Using Modal Analysis Techniques and to improve the criteria set out in the new DefStan 00-35 chapter. A first meeting of the Specialist Topic Group is planned to be held at Buntingford.

Those interested in attending or contributing to a website forum should contact [dave.richards@environmental.org.uk](mailto:dave.richards@environmental.org.uk)

## Former Civils director to be CEO at Engineering Council

The Engineering Council has announced the appointment of Jon Prichard as its new CEO. Jon will be joining the regulatory body at the beginning of August to replace Andrew Ramsay, who is retiring after 13 successful years at the organisation including eight years as its CEO.

Jon is already well known to the Engineering Council, having served on the Board from 2003 – 2007 and is currently Chairman of Trustees for the organisation's pension scheme.



**Prichard: Taking over at the Council**

Chairman of the Engineering Council Board Professor Kel Fidler says: "We are very pleased and excited by Jon's appointment as CEO. His background and experience align well with the needs of the Engineering Council as it meets the chal-

lenges faced by the engineering profession in the coming years".

Jon, a Chartered Engineer, joins the Engineering Council from High-Point Rendel, where as Director of Resources he is responsible for delivering the HR, IT, Quality Assurance and business support functions; a role he has held since 2007. Prior to that he was an executive director at the Institution of Civil Engineers where he was responsible for revitalising the delivery

of the learned society function, having previously led and reorganised the membership, qualifications and HR teams. Jon has also spent 19 years as an officer in the Corps of Royal Engineers, serving both in the UK and overseas.

## Letter to The Times

**In April, Chief Executive Raymond Clark was prevented from travelling back from holiday and wrote the following letter to The Times which was published on 21 April.**

Dear Sir,  
Having been grounded by the volcanic ash I am concerned to learn that airspace closure policy is now the subject of dispute between industry, government and regulators.

Talk of a "deal" being struck between the parties seems to give the problem a dimension that cannot sustain general respect for the competence of those involved.

Unhappily, this is another instance where public confidence in the science underpinning environmental issues is being eroded. After the Copenhagen talks there has emerged huge public scepticism and apathy about climate change because of the apparent disarray in the scientific community and associ-

ated distrust. Public re-engagement is vital if confidence is to be restored in the science involved in these issues. This is where environmentalists, scientists and particularly engineers have a duty to develop and present the issues in a way that can honestly and impartially admit to differing approaches and conclusions.

There can only be technological solutions to these environmental issues and the public must be fully on-side to support them. Increased transparency in the science that informs decisions is vital if the policies that affect so many people, are to be credible.

**Professor Raymond P. Clark, OBE, PhD, CEng, CEnv Chief Executive, The Society of Environmental Engineers**

## NEW REGISTRANTS & MEMBERS

### SEE – ENGINEERING COUNCIL REGISTRATIONS

We are pleased to announce that the following have gained registration with Engineering Council through the Society:

#### Corporate Member:

- Mr Fu Yin LO, CEnv
- Mr Shariff Bukhory, EngTech

#### Joint Members:

- Miss Joanna Kate Hursell, CEng (SaRS)
- Mr Choon Hen, John WONG, CEng (ICorr)
- Dr Rene Brueckner, CEng (ICorr)

### THE INSTITUTE OF EXPLOSIVES ENGINEERS:

- Major Kenneth Albert Cross, CEng
- Mr Ricky McCabe, CEng

### SEE – SOCIETY FOR THE ENVIRONMENT REGISTRATIONS

The following members have gained CEnv registration through the Society:

- Mr AU Kwok Wah CEnv MSEE
- Mr Bill Wadsworth CEnv MSEE
- Mr CHAN Cheuk Fai CEnv MSEE
- Mr CHAN Chi Man CEnv MSEE

- Mr CHAN Hau Ping CEnv MSEE
- Mr CHAN Siu Chung Mike CEnv MSEE
- Mr CHAN Yick Kin Eugene CEnv MSEE
- Mr CHAN Yuen Leung CEnv MSEE
- Mr CHAN Tai Wing Eric CEnv MSEE
- Mr CHAN Wai Hing CEnv MSEE
- Mr CHAN Wai Sun Philip CEnv MSEE
- Mr CHAN Yee Tak CEnv MSEE
- Mr CHAN Leong Ming CEnv MSEE
- Miss CHAN Kit Ying CEnv MSEE
- Mr CHAN Shiu Shing CEnv MSEE
- Mr CHAN Chi Pang CEnv MSEE
- Mr CHANG Hon Man CEnv MSEE
- Mr CHAU Kam Ki CEnv MSEE
- Mr CHENG Ying Chung CEnv MSEE
- Mr CHENG Chun Kit CEnv MSEE
- Mr CHEUNG King Loi CEnv MSEE
- Mr CHEUNG Ying Him CEnv MSEE
- Dr CHEUNG Kwong Chief CEnv MSEE
- Mr CHOI Kai Bong CEnv MSEE
- Mr CHOI Wan Chi CEnv MSEE

- Mr CHOI Siu Lung CEnv MSEE
- Mr CHOI Yat Ming CEnv MSEE
- Mr CHOW Kai Cheong CEnv MSEE
- Mr CHUA Manuel CEnv MSEE
- Mr CHUAH Teck Guan CEnv MSEE
- Mr CHUNG Kam Wing CEnv MSEE
- Mr David Richard Dunkley CEnv MSEE
- Mr Derek Patrick Maher CEnv MSEE
- Mr FOK Vincent Hing Chong CEnv MSEE
- Mr FUNG Chau Kam Jimmy CEnv MSEE
- Ms FUNG Mei Wing CEnv MSEE
- Mr FUNG Chi Leung Mondo CEnv MSEE
- Mr Gareth Leonard CEnv MSEE
- Mr Graham Norton Lee CEnv MSEE
- Mr HO Kui Ming David CEnv MSEE
- Mr HO Wai Keung CEnv MSEE
- Mr HUI Yuen Yuk CEnv MSEE
- Mr IP Shui-ming Andy CEnv MSEE
- Dr Jeremy Birnstingl CEnv MSEE
- Mr John Leslie Gibbs CEnv MSEE
- Miss Julie Duffus CEnv MSEE
- Mr KO Hoi Fai CEnv MSEE
- Mr KWAN Chin Ming James

- CEnv MSEE
- Mr KWAN Ka Nung Alex CEnv MSEE
- Mr KWAN Sui Wai Ray CEnv MSEE
- Mr KWOK Fu CEnv MSEE
- Mr LAI Wing Chun CEnv MSEE
- Mr LAI Chuen CEnv MSEE
- Mr LAM Kwok Fu CEnv MSEE
- Mr LAM Yuk Wing CEnv MSEE
- Mr LAM Yet Pui Alan CEnv MSEE
- Mr LAM Ming Yeung CEnv MSEE
- Mr LAU Chi Lam Victor CEnv MSEE
- Mr LAU Yuen Ki CEnv MSEE
- Mr LEE Kai Yuen CEnv MSEE
- Mr LEE Ying San CEnv MSEE
- Mr LEE Kai Man CEnv MSEE
- Mr LEE David Hin-Chung CEnv MSEE
- Mr LEE Tim Chee CEnv MSEE
- Mr LEE Sai Hung Vam CEnv MSEE
- Mr LEE Nim Sing CEnv MSEE
- Mr LEE Hoi Man Kevin CEnv MSEE
- Mr LEUNG Chi Kin CEnv MSEE
- Mr LEUNG Shun Cheong CEnv MSEE
- Mr LEUNG Wai Wah CEnv MSEE
- Mr LEUNG Man Wa CEnv MSEE
- Mr LEUNG Ho Yin CEnv MSEE
- Mr LEUNG Hang Fai CEnv MSEE

- Mr LEUNG Chung Fai Calvin CEnv MSEE
- Mr LEUNG Chi Yin CEnv MSEE
- Mr LI Chi Keung CEnv MSEE
- Mr LO Lung Wai CEnv MSEE
- Mr LOW Kam Leung CEnv MSEE
- Mr LUK Kwok Yin Thompson CEnv MSEE
- Mr LUK Wan Yeung CEnv MSEE

### SEE MEMBERSHIP

#### Honorary Fellow

- Mr Andy Tomlinson
- Mr Brian Hibbert CBE

#### Honorary Member:

- Mr Graham Hugh Waite, GW Services, UK.
- Mrs Jill Waite and Professor Mervyn de Calcina-Goff were awarded Honorary Fellowship at the 2010 AGM.

#### Member

- Mr YEUNG Wai Hung, Clement, Skycrane Equipment Co Ltd, HK

#### Joint Member

- Miss Joanna Kate Hursell, Atkins Ltd, UK

Due to shortage of space those gaining CEnv will be reported both in this and the next issue.

## SEE helps youngsters to make a big noise at the Big Bang

On 11 to 13 March the Society of Environmental Engineers in association with the Society for the Environment and Lockheed Martin ran an activity at the Big Bang Fair at Manchester Central (GMEX). The fair, organised by Engineering UK, had a target audience of students, aged between 7 and 19 years, and teachers. Over the three days approximately 22,000 attended, with the last day open to families. The aim of the fair was to showcase science, technology, engineering and mathematics in all its forms and give students an insight into how our world is affected by these subjects.

Our contribution to the fair was a simple solar water heater built by Steve Burnage of Lockheed Martin. The idea was to show students how effective the sun is at producing heat and light. The demonstration consisted of a simple solar panel



made of a timber frame with black plastic piping, a reflective back and a tank containing water with a small pump. The heat source for this demonstration was an 800W halogen heater. Students were invited to either just watch a demonstration or spend longer measuring the rise in temperature at intervals, record the rise and plot a graph.

The activity was assembled by Usmah Haleem and David Collins from Lockheed Martin, who also helped with the manning of the activity during the

course of the event and we thank them for their efforts and enthusiasm during the fair. Also helping with the activity was Kerry Geldart from the Society for the Environment. The Society of Environmental Engineers was represented by Graham Waite.

Over the three days of the event the activity was visited by approximately 150 people a day, a mixture of students ranging from 7 years to 16 years, teachers and adult visitors. Some 10 schools entered the competition and Steve Burnage has kindly



Shining a light: Solar panel exercise showed off aspects of environmental engineering at the Big Bang

donated two of the sets of equipment to the schools that registered the highest temperature gain. The schools were Peel Hall Primary School from Manchester and St Olave's School from York.

The event is to be repeated in 2011 and will be held at the Excel Centre in East London and it is hoped that we can enter an educational activity for that event. If any members are interested in participating or have ideas for an activity, please advise Jill at the Secretariat.



## LATEST STANDARDS IN THE FIELD OF ENVIRONMENTAL TESTING

By David Richards Hon.FSEE, CEng, CEnv  
Lockheed Martin UK Ampthill

### ENVIRONMENTAL CONDITIONS

■ **BS ISO 13320:** Particle size analysis. Laser diffraction method.

### ENVIRONMENTAL TESTING

■ **BS EN 60749-20:** Semiconductor devices. Mechanical and climatic test methods. Resistance of plastic encapsulated SMDs to the combined effects of moisture and soldering heat. Acoustics

■ **BS EN ISO 389-9:** Acoustics. Reference zero for the calibration of audiometric equipment. Preferred test conditions for the determination of reference hearing threshold levels.

■ **BS EN ISO 8253-2:** Acoustics. Audiometric test

methods. Sound field audiometry with pure tone and narrow band test signals. ■ **BS ISO 13474:** Acoustics. Framework for calculating a distribution of sound exposure levels for impulsive sound events for the purpose of environmental noise assessment.

### CORROSION

■ **BS ISO 21610:** Corrosion of metals and alloys. Accelerated corrosion test for intergranular corrosion susceptibility of austenitic stainless steel.

### CLIMATIC

■ **BS EN ISO 15927-2:** Hydrothermal performance of buildings. Calculation and presentation of climatic data. Hourly data for design cooling load.

### SHOCK AND VIBRATION

■ **BS EN 4662:** Aerospace series. Test specification for vibration control components.

■ **ISO 4866:** Mechanical vibration and shock. Vibration of fixed structures. Guidelines for the measurement of vibrations and evaluation of their effects on structures. BS EN 15129. Anti-seismic devices.

### ELECTRO-MAGNETIC

■ **BS EN 60255-26:** Measuring relays and protection equipment. Electromagnetic compatibility requirements.

■ **BS EN 61000-4:** Electromagnetic compatibility. Testing and measurement techniques.

-4 Electrical fast transient / burst immunity test.

-8 Power frequency magnetic techniques.

■ **IEC 61340-4:** Electrostatics. Standard wire methods for specific applications.

-6 Wrist straps.

-7 Ionization.

-8 Discharge shielding bags.

-9 Garments.

■ **BS EN 61547:** Equipment for general lighting purposes. EMC immunity requirements. IEC/TR 62630. Guidance for evaluating exposure from multiple electromagnetic sources.

### PACKAGING

■ **BS ISO 28219:** Packaging. Labelling and direct product marking with linear bar code and two-dimensional symbols.

### MISCELLANEOUS

■ **ISO/TR 7250-2:** Basic human body measurements

for technological design. Statistical measurements from individual ISO populations.

■ **BS EN 15856:** Non-destructive testing. Acoustic emission. General principles for of AE testing for the detection of corrosion within metallic surrounding filled with liquid.

■ **BS EN 15857:** Non-destructive testing. Acoustic emission. Testing of fibre-reinforced polymers. Specific methodology and general evaluation criteria.

■ **BS ISO 24153:** Random sampling and randomization procedures.

■ **IEC/TR 60493-2:** Guide to the statistical analysis of ageing test data. Validation of procedures for statistical analysis of censored normally distributed data.

## Training day for review assessors

The SEE arranged and ran a training day for assessors undertaking Professional Review Interviews (PRI) for Engineering Council registration on 18 May at Lockheed Martin at Ampthill, Bedfordshire.

The day was attended by delegates from the SEE, the Institute of Explosives, the Institute of Corrosion and the Society for Reliability and Safety. The training was undertaken by David Richards, Steve Burnage, and Mike Mann (Engineering Council representative to the SEE).

The training day was assisted by four engineers from Lockheed Martin who acted as interview candidates for the training sessions. The four engineers are all planning to seek engineering council registration in the next 12 months. For them the training day was useful practice.

PRI interviewers must be registered with Engineering Council as either, CEng, IEng or EngTech. The assessors should be prepared to help with interviews in the future. Typically we would anticipate this taking one or two days a year.

If you would be interested in acting as a PRI interviewer contact the SEE secretariat.

## CEO elected to Council post

Following a ballot of the smaller Licensed Member institutions, Chief Executive, Professor Raymond Clark, has been elected as the Group C representative on the Engineering Council Board.

The position of Board Member also includes becoming a trustee of the Engineering Council and the term is three years.

There is always a risk that developments in engineers' regulation and related policies on li-

ensing and registration overlook the particular concerns and interests of engineering institutions with relatively small numbers of registrants.

The Group C representative is therefore an important link between the Engineering Council Board and Group C institutions and has to effectively represent the smaller institutions and their valuable niche status within the engineering community.

## Log on to record your development

All Engineering Council and Society for the Environment registrants are required to undertake CPD (continuing professional development) to keep up to date with advances in their field. The SEE requires all registrants to confirm that they undertake CPD each year when subscriptions and registration renewal fees are due.

To help registrants and others, SEE in collaboration with Engineering Council, is making available, free of charge, an internet based CPD record keeping system. For full details log into [www.mypath.org.uk](http://www.mypath.org.uk).

## Treasurer takes on liaison duties

Honorary treasurer Steve Burnage has become the Engineering Council Liaison Officer for the SEE.

Approximately 60 Liaison Officers support the Engineering Council's Quality Assurance Department to ensure the consistency, efficiency and effectiveness of the Professional Engineering Institutions in fulfilling the requirements of the Council's registration licence.

Institutions nominate volunteers to act as Liaison Officers, chair Licence Review Panels and to serve on the Quality Assurance Committee.

## Obituary



### Pierre Lemann

It is with profound sadness that we have been informed that Pierre Lemann died on 17 March 2010. Pierre was the second President of CEEES (1986 – 1988) and the international coordinator of ASTE.

Pierre Lemann had a key role in the initiation of CEEES assisting in both its conception and initial development. It was his clear vision and enduring passion for CEEES, as well as its future development which steered the organisation through its early days and led to its subsequent growth. Pierre was until very recently active in both CEEES and ASTE.

Pierre was long time member of the SEE and a Fellow of the IEST. It was his foresight which identified the need for CEEES to have a web presence and he funded early versions of the site. The passion he demonstrated represents the core strength of CEEES and its values. His vision and personality will be missed by all who knew him.