



Introduction

January was another month when environmental issues captured the headlines. Growing concerns over climate change and carbon emissions now seems to be influencing debate in government and penetrating into the public consciousness. It is encouraging to see important figures such as politicians, the royal family and celebrities using their status to raise awareness on a global scale by actively voicing their views on environmental issues.

At the IES office January and February have been dominated by the administration associated with membership renewals. Thank you to all the members that have renewed their relationship with the IES. The year ahead looks set to be a promising one in which we hope to continue rolling out new services.

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News from the IES

Have Your Say!

Would you like to have a say in the running of the IES? We are currently looking to recruit more Council Members. This could be a great opportunity to put some spare time into charity work. You will be involved with decision making, and will be required to attend a meeting in London every two months. Please contact the office for more information.

Student Members

An important reminder to all lecturers running accredited programmes, please make your students aware that they can join the IES as a student member free of charge. Students on non-accredited programmes are encouraged to join as an affiliate member. Forms can be found on the website.

January Conferences

The IES jointly ran two conferences in January. The IES and Environment Agency ran a workshop on water bird indicators and the Institute for Air Quality Management held a day seminar on Indoor Air Quality. The main article of this newsletter is a report from the air quality seminar. Presentations from both these events can be found on the IES website.

SocEnv

SocEnv have re-launched their website: <http://www.socenv.org.uk>. Their aim for 2007 is to maximise the Society's contribution towards the development of a sustainable society. Furthering the successful relationship between SocEnv and the IES, Ms Carolyn Roberts, the current Chair of IES, now sits on the Society's board.

AGM

The 34th Annual General Meeting of the Institution of Environmental Sciences will be held on 6th March in the Grosvenor Office, 70 Grosvenor Street, London, W1K 3JP at 2pm in the Boardroom. Please return your Form of Proxy (supplied with the last journal to voting members) if you cannot attend.

Environmental News and Resources

Climate Change

The first of four IPCC reports have been published relating to climate change, and the effect human activity has had on global warming. To read the report:

http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/02_02_07_climatereport.pdf

A new 'Climate calendar' published by the World Development Movement shows that by the end of Monday 8 January 2007 the average person in Britain will have already produced as much CO₂ as the average person in the world's poorest countries. Follow the link for more details:

<http://www.wdm.org.uk/news/index.htm>

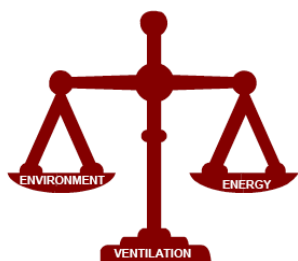
Forthcoming Events

Renewable Energy Forum: 2020 Vision

This forum being held in London on 1st March is part of a series to inform SocEnv's 'Energy Position Statement'. Experts from this sector, both commercial and public are invited to speak and answer questions from SocEnv members and CEnvs. If you would like to attend, please contact kerry.geldart@socenv.org.uk

'Across The Food Chain' 3rd May 2007

IAGRE's LANDWARDS 2007 'Achieving Traceability Across The Food Chain' conference will inform thinking on the requirements of those involved along the food chain and will present the latest developments in the integration of identification technology with agricultural production systems. The conference will be held at the East of England Showground in Peterborough, further details can be found at www.iagre.org



Personal Choice or National Responsibility for Indoor Air Quality

Main reporting: Adam Donnan

Supplementary reporting: Chantal Brown

Introduction to Indoor Air Quality

When people think of air quality, contrasting images of breathing clear countryside air and heavy polluted roadsides usually spring to mind. Rarely do they think of the quality of air they breathe indoors. Unless you are one of the one in twelve Britons who are chemically sensitive, you are unlikely to have thought too much about indoor pollutants. This is something of a paradox given that people spend in the region of ninety percent of their time indoors. The occasion of this workshop was prompted by the current revision of the UK National Air Quality Strategy, which is largely driven by health effects but is almost entirely concerned with outdoor air quality (OAQ). There are of course numerous regulatory difficulties in dealing with indoor air. However given that the National Strategy has been regarded as a success with improvements in ambient air quality and the designation of some 200 Air Quality Management Areas by local authorities, the conference was organised to turn attention from the outdoors to the indoors.

Energy Efficiency v Good Ventilation

Another public misconception is that indoor air quality (IAQ) is steadily improving. Demands for energy efficient homes and the government target announced by the Communities Secretary, Ruth Kelly, that all homes in England will be carbon neutral by 2016, are likely to have a detrimental effect on IAQ. The impact of new materials needed for insulation and the resulting lack of ventilation will see a sharp decline in IAQ. Given that homes in the EU account for 40% of total energy usage, domestic consumption is one of the central issues to tackle in the fight against climate change. However, there is a balance to be struck between energy efficiency and IAQ. Tadj Oreszczynsaid in his presentation warned "It is important to make sure that climate change does not swamp the argument and we end up with very poor indoor air quality." He predicted that in the future people would, in the name of energy efficiency, begin to reverse the current good ventilation policies that have finally become embedded in the public consciousness.

There are numerous health arguments for having well-insulated homes. Tadj has studied figures of the government's Warm Front grants and found that some individuals who had heating improvements work done on their houses showed improvements in their mental health, attributed to a lowering of stress. However poor IAQ also has detrimental effects on people's health. Ben Croxford's research project involved checking 597

'Environmental Chemistry in the Polar Regions' Conference 6th May 2007

The RSC Environmental Chemistry Group is holding a conference entitled 'Environmental Chemistry in the Polar Regions' on 6th March 2007 at Burlington House, Piccadilly, London. For more information visit <http://www.rsc.org/ConferencesAndEvents/cfconf/alldetails.cfm?ID=18140>.

IES Online

New Online Resources Launched

The IES has introduced a new events resources section on the website to house presentations, slides and documents from events organised by the Institution.

<http://www.ies-uk.org.uk/resources/eventresources.html>.

Presentations are available from the recent water bird and air quality events.

Debate from the Forum

In this section we highlight interesting debates from the IES online forum. Start your own discussions at www.ies-uk.org.uk/members/forum.html. Please remember that all views are the views of the author and not those of the IES and have been edited for this newsletter.

The debate was entitled "Reality extinction – An ethical dilemma"

homes, with 1474 occupants, and 1406 gas appliances. The research found nearly 20% of vulnerable households in east London area are exposed to levels of CO above the lowest WHO guideline for ambient air (8.6ppm for 8 hours) due to problem gas appliances. These were mostly gas fires and gas grills. Possible effects of high levels of carbon monoxide can have on residents include headaches, feeling faint or sick, memory loss, lack of concentration, confusion and in the most extreme cases neurological damage and death.

Studying IAQ

Tadj Oreszcyn talked of the limitations of physics modelling with regard to indoor air quality. He used the example of conservatories to prove the limitations of physics modelling. Initially conservatories were promoted by the EU as a good solar tap and therefore an energy efficient tool. However, occupational model surveys showed that people heated them in winter and air-conditioned them in summer, creating a significant energy drain. Double-glazed conservatories resulted in twice as much energy consumption as single glazing! This highlights the fact that occupant behaviour is hard to predict. Ben Croxford talked about another case where data from a house showed alarming spikes in carbon monoxide levels in a house on a Saturday. On questioning the occupants he found they were Orthodox Jews and were turning on their gas cooker on Friday night and leaving it on all of Saturday. Tadj used a quote from the Santa Fe Institute to summarise this "In theory, theory and practice are the same, but in practice they are not."

Indoor Air Pollution

IAQ is of course directly linked to indoor pollution. Derrick Crump summarised "Indoor air pollution is the presence in buildings of toxic or other substances which may directly or indirectly be a cause of occupant ill health or discomfort." Indoor air pollution is affected by concentrations of pollution in the outdoor air, as well as indoor source and the extent to which it is diluted and removed from the indoor environment (by ventilation and removal by deposition and absorption as well as reaction).

So what effects are high concentrations of indoor pollutants likely to have on the occupants' health? Studies on high outdoor pollution have found associations with an increase in hospital admissions for treatment of heart and lung disease, and in the number of deaths occurring each day. Long-term exposure to particles reduces life expectancy. Occupants' exposure to outdoor generated pollutants occurs mostly indoors.¹ Exposure to pollutants generated indoors include; effects on occupant comfort, irritation particularly of the eyes and respiratory system; increased risks of disease such as cancer and cardiovascular illness, and acute and lethal poisoning, as can occur through exposure to high concentrations of carbon monoxide. Environmental tobacco smoke is a special case being a complex mixture of gaseous and particle pollutants that when present is probably the most important and avoidable pollutant source.²

There are numerous sources of indoor pollution. Once again there is a great deal of public ignorance of emissions from everyday items, and water moisture as indoor pollutants. Some countries have emissions labelling, particularly Scandinavia, which helps to raise awareness whilst setting healthy standards within the home. Local effects on indoor air quality were highlighted by Jo Barnes, who studied the impact of the traditional arsenic mining in Cornwall on indoor air quality. High concentrations of arsenic in house dusts were found. The re-suspension of arsenic particles outdoors correlated with particles found indoors and therefore arsenic exposure requires further monitoring.

Improving IAQ

So what can we do to improve the air quality in our houses? The IAQ Survey recommendations on exposure tell us the following things; to avoid being in the same room as gas cooking activities, especially if a gas oven is

ajdonnan - ITV in association with the World Wildlife Fund is showing 'Extinct', during which eight celebrities are paired with species that are nearing extinction. They are flown to far-flung destinations to explain the threats and problems facing their animal... the celebrities will appeal to the public to vote by phone and text... Is this a brilliant adaptation of a *de rigueur* form of TV for an ethical cause or a distasteful trivialisation of an important issue?

JShort – A crass reality TV style treatment of a sensitive subject. While the idea was to vote for the animals you felt most strongly for, in reality it was encouraging people to vote species into extinction from the comfort of their armchair... The privileged in the world can dip a hand in their pocket and throw some small change at the world's biggest problems to make themselves feel better, without having to confront the underlying issues they are part of.

PhilHolmes – this "TV Event" is furthering the belief that we've the right to "play god" with other species, instead of the less anthropocentric issue which is "we have decimated their populations, let's do something about it"...is sweeping cameras into coral reefs, international haulage of film crews and equipment, or promoting tourism in delicate ecosystems acceptable?

in use; to ensure good extract ventilation close to gas cooking appliances; to use low emission materials in the construction and furnishing of homes, and to ensure good ventilation, especially during construction and the first year of occupancy. Good IAQ can be achieved by low source strength and adequate ventilation, in addition with efforts to improve outdoor air quality and avoiding exposure to tobacco smoke. Simon Watts raised the possibility of an appliance-based regulatory approach with moves towards less reliance on gas, which would aid in improving the IAQ in Britain.

Indoor ventilation during Britain's summer means for most people opening the windows. However our warmer neighbours close their windows and shades to stay cool which creates a cooler and healthier IAQ.

Regulation

Currently there are many regulations at various levels of government affecting indoor air quality. There are rafts of local, UK, EU and international recommendations, yet the major problem is how to regulate inside people's homes. The consensus seemed to be that the Government's most effective means of regulating IAQ was to give guidelines and educate people.

Incredibly poor design issues are sometimes associated with IAQ. Vina Kukadia discussed her findings of incorrectly placed fume cupboard outlets and unit inlets and urged that local pollution sources should be taken into consideration when designing buildings. This is not always obvious or easy, due to various changeable factors, but building design needed to be thought of in the long term.

In summary, indoor air pollution has great significance for individual health and its links to building design, occupant behaviour, outdoor pollution and geographical location are complex and under-researched. Air quality campaigners should concentrate on areas that will concern the government such as old peoples home, whereas most of the studies presented were done in universities and offices, which are less vulnerable groups.

We would like to thank the following speakers for their presentations upon which this report is based - Derrick Crump, Tadj Oreszczyn, Ben Croxford, Jo Barnes, Dudley Shallcross, Vina Kukadia, Nicola Carslaw and Mike Asmore. All presentations are available to download on the IES website at www.ies-uk.org.uk/resources/iaq.

¹ COMEAP 2004, 2006

² COMEAP 2004



UWE air quality experts launch new e-report

Air Quality Management experts from the University of the West of England are helping local authorities with local air quality management consultation with the publication of a new e-report entitled, Steps to Better Practice: Guidance on Local Air Quality Management Consultations for Local Authorities.

The e-report was launched on 25 January 2007 at the UWE / NSCA South West division annual conference at Bristol Zoo.

This practically oriented publication offers suggestions on how to maximise the benefits of consultations with a variety of different stakeholder groups. It highlights the importance of upstream engagement with stakeholders ranging from transport planners to local community groups.

Developed from the results of a two year ESRC funded research project, the guidance provides examples of best practice in the field of consultation.

Thank you:

To all of our international members who responded to our request for topical overseas articles. Due to the large response, these articles will now be released in the **next journal** which will be an international issue. This will definitely be an issue to look out for, with interesting environmental articles from around the globe.

Finally

If this edition of EnviroSci News hasn't fulfilled your need for environmental science news then try the new online journal <http://www.iop.org/EJ/erl>

If you have any comments or suggestions about the new look of the EnviroSci Newsletter or any of the articles please email us enquiries@ies-uk.org.uk or post them on the Forum.

The project was carried out as a partnership between the Air Quality Management Resource Centre and the Science Communication Unit at the University of the West of England and the Department of Geography at the University of Hull.

Professor Jim Longhurst, the principal investigator of the research project said, "Steps to Better Practice is an important resource for local authorities, providing guidance on how to integrate consultation within the LAQM process. It offers advice on how to make the most of limited resources in the continuing fight to improve air quality."

Dinah Woolley, South Gloucestershire Council said:

"This guidance document offers practical advice which is easy to implement. Highlighting challenges and opportunities at each of the stages of the process will help local authorities make the most of air quality consultations."

Steps to Better Practice provides practical guidance on how to integrate consultation within the LAQM process to make the most use of statutory and non-statutory stakeholders. This is broken down into 10 steps to better practice for LAQM consultation and works through the challenges and opportunities that arise at each step. The guidance also explores the novel approach of embedded engagement and highlights the importance of 'local champions' and the benefits of early engagements. The guidance can be downloaded at <http://www.uwe.ac.uk/aqm/esrc>

The Air Quality Resource Management Centre provides a comprehensive service to all professionals working in the field of air quality management. The Centre is one of the leading organisations for the study and resolution of air quality management problems in the UK.

The Science Communication Unit (formerly the Graphic Science Unit) is one of the UK's leading science communication centres. The unit combines a focus on both the practical aspects of communicating science with research into best practice.

Views expressed in the e-newsletter are those of the authors and do not necessarily represent IES views or policy. The Institution does not assume responsibility for external content.

Any queries or comments can be directed to the IES Office.

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