

S-Lab Newsletter

Issue 2, April 2010



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This newsletter is part of the S-Lab (Safe, Successful and Sustainable Lab) initiative of the Higher Education Environmental Performance Improvement (HEEPI) project (see www.goodcampus.org). S-Lab works in collaboration with the US Labs21 initiative. In addition to covering our own activities, future editions will publicise other events and innovations re laboratory sustainability in all sectors. Please contact us with any relevant info.

1) Six free events – new ones at Newcastle and York

A new workshop at the University of Newcastle on June 21st, examines the Medical Sciences New Building (morning) and the refurbished Bedson Chemistry Laboratory (afternoon), and concludes with a panel discussion of laboratory refurbishment. A second new workshop, at the University of York on April 21st, covers good laboratory housekeeping and environmental improvement. It has similar content to our Oxford event on April 27th, which has proved very popular and is now full. Places are still available at our events on Laboratory Environmental Improvement (Edinburgh April 23rd), Sustainable Clean Rooms (Cranfield on April 26th – focusing on energy efficiency in bio, nano, precision engineering and similar facilities: see below) and Sustainable Laboratory Chemistry (York June 14th). The April events all feature Amorette Getty, from the LabRATS (Laboratory Research And Technical Staff) programme in the University of California.

The UK Science Parks Association annual conference on laboratory best practice and future trends will also feature a workshop by HEEPI on scientific computing, at Nottingham on June 10th.

[Click here](#) for more details and booking for all events.

2) New Cases - Belfast Bio Lab and Chemical Management

Our first two cases are now available. The first features the Centre for Cancer Research and Cell Biology building at Queen's University of Belfast, and is based on the presentations made at our November event there. Interesting features include design for flexibility, a rigorous pharmaceutical industry approach to commissioning, and many low carbon features including solar water heating and ventilation heat recovery. The second is on the University of Edinburgh's Chemical Management System, which tracks all chemical use within the Chemistry Lab and has saved over £100,000 over two years on procurement. [Click here](#) for

S-Lab: Safe, Successful and Sustainable Laboratories.
A HEEPI Project

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- » New cases - Bio Lab and Chemicals
- » Clean Rooms
- » EMS in Labs
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- » Carbon Commitment Reduction

more details. We already have further cases in hand on several new and refurbished labs, energy efficient fridges and freezers and fume cupboard reporting. If you have labs or actions whose environmental features might be of interest to others in the sector please contact us.

3) Clean Room Energy Efficiency

The several hundred air changes per hour required by many clean rooms makes them up to 50 times more energy intensive than an office building. This high level of ventilation, and associated filtration and conditioning, creates extremely high fuel bills and a heavy carbon footprint. The Cranfield S-Lab event on April 26th includes a presentation by Nigel Lenegan, Chair of the International Society of Pharmaceutical Engineers' Global Sustainability Group, who believes that "clean rooms have been over-designed for years to ensure robust and safe operation. Hence, whilst respecting product, process (especially biocontamination control) and people considerations, there are real opportunities to drive out waste and contingencies, whilst still providing good levels of compliance. These include permanent air-change rate reductions, temporary set-back and switching off UDAF (uni-directional airflow) units in "out-of-hours" periods, more use of variable speed drives on fans, out of hours, widening temperature & humidity control ranges, and reducing pressure drops by installing increased capacity filters for the first and second stages of supply air filtration. In new facilities, there also great opportunities to optimise systems and layouts to minimise pressure drops and capital cost." Another speaker, James Drinkwater, Chair of the Pharmaceutical and Healthcare Sciences Society, adds that other "opportunities are use of catalyst technology for removal gaseous decontamination residuals in clean rooms and associated material transfer devices, and - in clean rooms with long periods of non operation, e.g. clinical trials filling - set back of air change rates."

4) EMS in Labs

Many universities now have an Environmental Management System (EMS) to ensure that all environmental issues are identified and managed, and that there is continuous improvement in performance. In some cases, the EMS is a 'full blown' system which is compliant with all aspects of the ISO 14001 standard, but in others it is based on the staged approach developed by the HEFCE-funded Eco Campus project. Both approaches have struggled to deal with laboratories so the implementation of a school-level EMS in Cranfield University's School of Applied Sciences – which is also featured in our April 26th event – is unusual if not unique. Please get in touch if you know of other cases where EMS is making a difference in laboratory settings.

5) Laboratory Auditing and Assessment

We are developing two methods for improving laboratory environmental performance. Lab-CURE (Chemicals, Utilities, Resources, Ecology) is focused on day to day laboratory

operation, and hence is primarily aimed at laboratory managers and technicians. It is based on the work of LabRATS, and will be taken forward through two pilot audits involving Amorette Getty during April. Laboratory Energy Audit and Footprinting (LEAF) is more focused on energy consumption and, because much of this is related to ventilation and other building services, is primarily aimed at a core audience of facilities staff and laboratory designers and contractors. Please get in touch if you are interested in helping us to develop either or both of these.

6) Training Lab Managers and Technicians

As the previous paragraphs illustrate, lab managers and technicians are central to improving lab environmental performance and so S-Lab is delighted to be working with the HEaTED (Higher Education & Technicians Education & Development) project, which supports their professional development in a range of areas. As with S-Lab, HEaTED is mainly financed by the UK higher education funding councils, and runs a number of specialised courses and events which can be checked out at www.heated.ac.uk. We are currently working with HEaTED on several topics, including the development of training materials for laboratory environmental improvement. Please get in touch if you would be interested in piloting these through an internal training session.

7) Pressure Mounts on Laboratory Energy

The UK Carbon Reduction Commitment (CRC) started on April 1st. It aims to provide financial and reputational (in the form of a performance league table) incentives to reduce fossil fuel-derived energy consumption (and thereby carbon emissions). Russell Group universities will find it difficult or impossible to benefit from the scheme without tackling laboratory energy consumption. For example, at one institution examined by S-Lab the biology and chemistry departments were the two largest carbon emitters on campus. Fortunately there are many opportunities for cost-effective energy/carbon saving in labs, and so lab managers and users are likely to be increasingly involved in implementing these in coming years. [Click here](#) for more details on the CRC, or for a potted summary see HEEPI's guide to [Carbon, Energy and Environmental Issues in Higher Education – Current Regulations and Schemes](#).

S-Lab website is www.goodcampus.org. To contact us email Lisa Hopkinson at [l.m.hopkinson\(at\)bradford.ac.uk](mailto:l.m.hopkinson(at)bradford.ac.uk).

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