School of Engineering

engineering the future

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Students win £50k Makeover Prize for Crush Hall

During the latter part of last academic year (09/10), the Students' Association (EUSA) ran a competition to encourage students to identify spaces within the University's buildings which could be improved, and to submit ideas for these improvements. The winning entry was to be taken on as a funded project by the University.

We are absolutely delighted to report that a proposal for upgrading of the Crush Hall area, led by our School's two 09/10 EUSA Student Council reps, Cath Inglesfield and Evelyn Buchner Santos, was chosen as the winner from 36 entries from across the University. Cath and Evelyn worked extremely hard to gather very many great ideas from 100+ other Engineering students. This vision coupled with such a wide set of inputs and all those signatures was a winning combination.

The University has now taken on the project to a value of £50k, and is currently designing the detail, in close cooperation with the student body. Building work will take place in the latter part of Semester 2 (to minimise disruption to classes), with the opening planned for September 2011.

We will then have a much improved Crush Hall, sporting comfortable seating and soft study space. We hope that this is just the first phase in creating a vibrant, modern and useful hub for Engineering students to use and enjoy.

This project is a wonderful testament to what can be achieved when the University and its students work so well and positively together.

L to R: Evan Beswick (VPAA), Evelyn Buchner Santos , Catherine Inglesfield and John Martin (Learning & Teaching Spaces Advisory Group)

Photo courtesy of Matt Dale

Teaching Organisation Refurbishment

Engineering students have returned this September to discover that the Engineering Teaching Organisation (ETO) has experienced quite a transformation. Over the summer break, the cramped service area has been replaced with a bright, spacious new reception area. The small hatch through which conversations between ETO staff and students were forced to take place has been replaced by a large counter. This allows administrative staff to speak to up to four students at a time, and has already made a dramatic difference at busy times, helping to cut down waiting times substantially. The counter also removes the physical barrier between staff and students and facilitates a more open, student friendly atmosphere.

The ETO reception is now large enough to house all the boxes for coursework submission and collection, and provides a one-stop-shop for all our taught students' administrative needs. It is also fully accessible to students with mobility issues, with the provision of automatic doors and lower counters for students using a wheelchair.

Civil and Environmental Engineering Student Mentoring Scheme

24th September saw the launch of the Civil and Environmental Engineering Student Mentoring Scheme. This seeks to put second and third year undergraduates in contact with practising civil engineers, allowing them to experience aspects of engineering practice that cannot normally be covered in the lecture room – for example, the business and commercial aspects of engineering design, client relationships and the format of deliverables such as design reports and drawings. In third year, students will benefit from mentor advice on sustainability aspects of course work projects.

The mentors are all volunteers, recruited and organised by a working group of the Civil and Environmental Industrial Advisory Board. Working group chair Paul Steen of Ramboll said: "I am excited about the prospects that this opens for students to meet with professionals in the industry. We are grateful that so many volunteers were forthcoming from the civil engineering industry that recognise the importance of their contribution to students and the benefits that they will get from supporting this important initiative."

Carbon Capture

In the recent UK spending review, up to £1bn of funding was promised by the government for the first national large-scale carbon capture and storage project. This commitment emphasises the importance of the research being carried out in this area, to help reverse the growth in fossil carbon dioxide emissions as part of a global strategy to avoid dangerous climate change.

Researchers from the carbon capture group in the School of Engineering are involved in a number of projects looking at ways to reduce CO_2 emissions, many of which involve collaboration with industry. The EPSRC and the National Science Foundation of China have also recently awarded the group funding for a UK/China collaborative project valued at £664k for the UK component plus a further equivalent Chinese contribution.

The funding will be used to establish a formal collaboration between the University of Edinburgh and North China Electric Power University in Beijing to build upon the research excellence in carbon capture and storage technologies at both institutions. The project, called Fundamentals of Optimised Capture Using Solids, will begin in January 2011 and run for three years until December 2013.

Successful Year for the BRE Centre for Fire Safety Engineering

STAR technology: STAR (Self-sustaining Treatment for Active Remediation) is an innovative technological solution for remediation of a wide range of hazardous chemicals polluting the soil and groundwater at industrial sites. The technology was developed by researchers from the School of Engineering and is now being trialled at the field-scale in North America. The University of Edinburgh has entered an exclusive licence agreement with US engineering firm Geosyntec Consultants to commercialise the technology. The STAR research team were recognised for their novel and innovative contribution by being awarded the 2009 Lord Ezra Award in Combustion by The Combustion Engineering Association.

Awards: A number of awards during 2010 have recognised the contributions and impact of our research. Of special mention are that Prof José Torero was elected Fellow of the Royal Academy of Engineering; Dr Guillermo Rein received the Hinshelwood Award and the Distinguished Paper Award on Fire Research both from The Combustion Institute; Dr Adam Cowlard was awarded a post-doctoral Fellowships from the AXA Research Fund; Dr Sung-Han Koo received an International Young Researcher Scholarship from the Tokyo University of Science, Japan; Mr Sam Grindrod was awarded the J M Lessells Travel Scholarship from The Royal Society of Edinburgh; and Mr Stern-Gottfried was awarded the David B. Gratz Scholarship from the National Fire Protection Association (USA).

L to R: Prof Jason Gerhard, Prof Jose Torero, Lord Howie of Troon, Dr Christine Switzer, Dr Guillermo Rein.

Student Prizes

Our students have had another very successful year winning prizes in various categories:

Excellent performance of our students at the 11th IWA UK National Young Water Professionals Conference

Douglas Aitken, a PhD student and Miriam Hansen an MEng student presented their research as platform presentations at the 11th IWA UK National Young Water Professionals Conference in April 2010. Douglas was the winner of the Best Platform Presentation, and Miriam was awarded the joint runner up for Best Presentation.

2010 Water Engineering Award

Douglas Aiken, a PhD student, has also been awarded the 2010 Water Engineering Award. He received the Award which consists of a medal and certificate in London in the presence of HRH The Duke of Kent.

L to R Dr Katrina Charles (University of Surrey), Douglas Aitken, Miriam Hansen, John Bagnall (Cranfield University)

Two New Fellows

Congratulation to Professor Chris Hall on his recent election as Fellow of the Royal Society of Edinburgh and Professor José Torero who has been elected as a Fellow of the Royal Academy of Engineering. Professor Hall is the Director of the Centre for Materials Science and Engineering. Professor Torero is the Director of the BRE Centre for Fire Safety Engineering and the Head of the Institute for Infrastructure and Environment.

Edinburgh bright sparks solve our internet problems ... with the flick of a light switch

The D-Light technology utilises the high-speed switching properties of white LED's (light emitting diodes) as a method of wireless data communication with data rates equivalent to conventional 802.11 wireless networks and additional benefits of:

- Energy efficiency – uses LED lighting infrastructure with no additional power requirements
- Wider spectrum – more capacity than WiFi frequency bands
- Improved Security – does not penetrate beyond building walls
- No electromagnetic interference – alleviates health concerns over RF transmissions

As LED's increasingly displace incandescent lighting over the next few years, general applications of D-Light technology are expected to include wireless internet access, vehicle to vehicle communications, broadcast from LED signage, machine to machine communications etc.

Smart Microsystems Award

The Smart Microsystem Flagship Project is a major IeMRC research programme involving 12 companies and the joint research Institute for Integrated Systems (IMNS, Heriot Watt and the UK Astronomy Technology Centre). This £1.5m EPSRC funded project, with an industrial contribution of £1.3m, has started research focused on the exciting prospect of integrating novel material and manufacturing technologies with microelectronic ICs (Integrated Circuits). This will involve adapting existing and new micro- and nanotechnologies to produce innovative product solutions through the direct integration of electronic ICs with additional components and materials.

Alumni News

Honorary Fellow Receives Prestigious IEEE Award

John W Arthur, who is an Honorary Fellow in the School, has been awarded the Donald G. Fink Prize Paper Award by the IEEE for his paper "The Fundamentals of Electromagnetic Theory Revisited" published in the Proceedings of the "IEEE Antennas & Propagation Magazine". This prize is awarded annually for the most outstanding survey, review, or tutorial paper published in the IEEE Transactions, Journals, Magazines, or in the Proceedings of the IEEE.

Former Lecturer Returns to Work with D-Light Project

Gordon Povey has moved from his position of "Vice President, Research" at Artilium back into the University as "Product Manager" for the Scottish Enterprise funded project "Data Light", to commercialise Prof Haas' research on data transmission via LEDs.

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