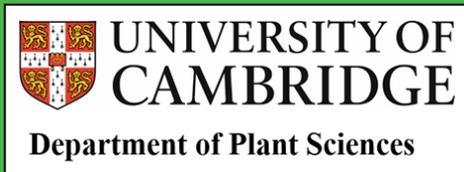




Finalist's case study

University of Cambridge Sustainability Professional Award Martin Howes



About the role

Summary

The Department of Plant Sciences is a research-heavy and energy intensive institution in the heart of Cambridge, making it a challenge to reduce energy consumption and environmental impact. Martin is Energy Co-ordinator for the department and he leads efforts to tackle these by engaging staff and delivering savings.

The number of energy-related projects running at the department has dramatically increased since Martin's arrival and spans a broad range of applications; from behaviour change, to building services optimisation, to innovative development of new LED technologies.

Project partners

Facilities and administrative staff, researchers and students at the Department of Plant Sciences Environment & Energy section of Estate Management, University of Cambridge Convion (UK) Ltd. Infors (UK) Ltd.

The results

The problem

The University identified Plant Sciences as a high energy user after rolling out its Electricity Incentivisation Scheme (EIS) in 2008. The main department building is over one-hundred years old and costs almost £200,000 in utilities per year. The sister Plant Growth Facility on the Botanic Gardens site is the most energy intensive building of the university's estate, costing £1000 every day in electricity to power controlled environment growing conditions. These factors combine to pose a sizeable challenge when trying to reduce energy consumption and environmental impact.

The approach

The underlying brief for the Energy Co-ordinator role is to reduce the energy usage and carbon intensity of department activities. It has technical, management and engagement aspects. A lot of this starts with engaging people and showing that there are benefits to their research by being more energy efficient. With them on board projects can then be developed that bring improvements.

Profile

- Higher Education
- 19,000 Full Time Equivalent Students
- 10,500 staff
- Urban

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Our goals

To significantly reduce the electricity consumption and carbon emissions associated with departmental activities. To integrate an environmental narrative into the fabric of how the department runs. To innovate in our solutions, particularly with regard to plant growth LEDs and to effectively communicate and spread the work being done in the department that can positively influence elsewhere.

Obstacles and solutions

Old facilities	Accept that there are some solutions that are off-limits without building a whole new building. Make sure that changes and refurbishments that are made perform as intended and expected. Pick your battles.
A variety of user demands on equipment and infrastructure	A one-size-fits-all approach simply does not fit in a department with wet lab users, computer modellers and fieldworkers! Engage on the issues that are relevant to them through forums like a Green Reps Network.
Approval and funding for projects	If time and scale allows, trials of a solution are invaluable for proving savings and clarifying the effect of any changes for notoriously conservative researchers!
Engagement with a high turnover of users.	Strike a good balance with regularly updated inductions and be prominent by running events and interacting with people. Don't let messages and aims get stale.

Performance and results

- Currently maintaining a year-on-year reduction for the main department building of 4% for electricity and 8% for gas, plus a 3% reduction in electricity usage at the department's Plant Growth Facility.
- Implemented a new departmental environmental and energy policy.
- Driven forward four LED projects: controlled environment plant growth lighting (plant growth rooms and algal incubation shakers, both industry leading), greenhouse supplementary lighting and microscope lighting. Once all reach their conclusion the department will be saving well over £100,000 per year, with significant further roll-out, and savings potential, in sister institutions both affiliated to University of Cambridge and elsewhere. Please refer to Green Gown Awards 2015's Research & Development Highly Commended entry.
- Identified and resolved a variety of previously unknown faults and set-up errors associated with laboratory refurbishments that were secretly costing over £5,000 per year.
- Established the metering capabilities of the department and implemented a robust monitoring system that forms the basis for finding and identifying faults and problems as well as opportunities for efficiency projects.
- Led successful student projects; particularly in a thermal imaging survey of the department from which recommendations were delivered to Estate Management to inform future maintenance actions at the department.



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The future

Lessons learned

It is fundamental to gather as in-depth an understanding of how an institution operates as possible when trying to improve its performance. It is also very important that colleagues understand why you are there and what you are trying to achieve; especially if the role is a new one. An honest and open approach is the best way of finding opportunities and developing solutions that work for all stakeholders. Know when to drive and when to facilitate. For example, researchers may know how their practices can be made more efficient, but lack the project management capacity or funding to make it happen, which is where a role like this can unlock the solution.

Sharing your project

As this role is unique in the university, it has been important to report progress to the department, the University and beyond. Inviting other departments to see what is happening at Plant Sciences, presenting well received sessions on LEDs and plant growth at S-Lab events and visiting other institutions to compare notes and spread knowledge have all been worthwhile.

What has it meant to your institution to be a Green Gown Award finalist?

Achieving the ambitious carbon emissions targets that the University has set itself relies on the outstanding contribution of our members. To have finalists in the individual categories of the Green Gown Awards for the first time in 2016 is a wonderful reflection of the work being done across the University on environmental matters by both staff and volunteers.

Further information

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