

Greenlines

The University's
sustainability newsletter

Wireless occupancy sensors - will the last one to leave please turn off the lights?

Nobody thinks they are responsible for switching off lights in corridors and equipment rooms, but lights left on in these areas result in significant wasted energy. Now, building on a successful trial of wireless occupancy sensors, £500,000 has been earmarked to roll the technology out across the University to help cut lighting costs and save carbon.

From meeting rooms and corridors to toilets and equipment spaces, most buildings across the University have what can best be described as "unloved areas". Often shared facilities that people use for short spaces of time, these unloved spaces are also a significant waste of energy because, unlike offices, individuals don't feel responsible for turning the lights off.

Set up in 2011 to help deliver the University's Carbon Management Plan, the Energy and Carbon Reduction Project (ECRP) piloted a range of initiatives – from technical to behavioural – in five of the University's heaviest energy users. One of the technological fixes, first trialled at the Gurdon Institute, was a wireless sensor system that automatically switched off lights in unoccupied rooms.



According to Kathy Hilton, Building Facilities Manager and energy champion at the Gurdon:

"Early on it became apparent that lighting in the Gurdon could potentially account for about 10% of our total electrical consumption, so we started to trial ways of improving this, especially as some lighting companies suggested that lighting retrofits could reduce our lighting consumption by as much as 50%."

Wireless occupancy sensors are a simple solution to the problem of lighting unloved areas. Using an infra-red detector, the motion sensors detect

people moving – or not moving – around a room or corridor and switch off lights after a certain period of inactivity. They can also dim lights in response to ambient lighting conditions and, crucially, they use wireless technology to communicate between the sensor and the light fitting.

Based on a free trial of the Lutron Rario lighting control, the Gurdon identified 97 unloved areas where wireless occupancy sensors could be installed. Based on the initial business case, estimated annual savings at the Gurdon are 100,000 kWh – equivalent to 54 tonnes of carbon per year. And while the University has

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yet to conduct post-implementation monitoring, projected savings of £10,000 a year on an investment of £20,000 mean payback could be as little as two years.

According to Xiang Cheng, Building Energy Manager in the University's Environment and Energy (E&E) Section: "The beauty of the wireless occupancy sensor is that you don't have to physically wire the sensor to the electrical switch, it gives out a wireless signal. This means retrofitting is quick and easy and can be done with only minimal disruption because the sensor is simply attached to the light and the only the light switch is replaced."

As a result of what's been learned at the Gurdon, the E&E Section is now rolling out wireless occupancy sensors across the estate, making the sensors the first energy saving solution identified by the ECRP pilots to go University-wide. ECRP has allocated significant funding to roll out wireless occupancy sensors, and over 100 have already been installed across the University.

Cheng comments that "After the success of the ECRP pilots, we now need to make meaningful cuts in our emissions and that means ramping up our activity and implementing the best solutions beyond the pilot departments. Wireless occupancy sensors represent the first project where we're implementing this widespread roll out".

"Beyond the Gurdon we have approved funding to install them in other buildings that were part of the ECRP pilots, such as the University Library and Chemistry, as well as buildings beyond the pilots, including Geography and Veterinary Medicine" explains Carbon Reduction Manager Sally Pidgeon.

User feedback on wireless occupancy sensors has been very positive. "Installing the sensors took three days and didn't disrupt our working routine. The whole process was really easy and we are very

pleased with the results" said Nathan Smith, Faculty of Economics.

In addition, valuable lessons have been learned about where the technology works best. While the sensors worked well in many of the Gurdon's unloved areas, they saved less energy than expected in others. This, says Cheng, is because they were installed after a major behaviour change campaign aimed at encouraging staff to switch off equipment not in use. The campaign was so successful that staff were better at turning off lights than the sensors.

"Interestingly, in these areas energy consumption didn't go down because staff were too good; occupants were so keen to save energy that they turned off the lights, so installing the sensors removed individuals' control," he explains. "We tend to think these technologies always save energy, but the trials showed that the results you get depend on a building's culture."

"The ECRP pilots taught us that saving energy isn't only about technological fixes," Pidgeon adds. "You have to think about how people interact with the technology, that's an important finding and something we'll need to be mindful of as we roll things out."



We are recruiting an Environmental Co-ordinator

Salary: £27,057-£32,277

Closing Date: 9 April 2015

This is a great opportunity to help shape the environmental sustainability policy and performance of a world class institution.

Key elements of the role include assisting in the development of the University's Environmental Management System, coordinating and developing waste management and recycling programmes and delivering a wide range of communication and engagement initiatives.

Candidates should have excellent interpersonal and communications skills and knowledge of a range of environment and energy related issues. For further details and to apply for this role, visit: <http://www.jobs.cam.ac.uk/job/6551/>.

Fancy learning about environmental auditing?

Sign up to Green Impact Auditor training and get:

- o Free IEMA approved training
- o Volunteering experience
- o Transferrable skills
- o Free lunch!

What skills do I need?

No technical knowledge is needed! Full training will be provided to fit in with any learning or access requirements. All you need is an interest in environmental issues.

For more information and how to apply visit: <http://www.environment.admin.cam.ac.uk/getting-involved/green-impact/students>.

Travel Survey results are in!

For one week every October, Travel for Cambridgeshire undertake the University's annual travel survey. We use their results to help us understand how you are travelling to the University and to help us shape future transport policies. In total 21% of staff responded to the online survey and here are the main headlines....

More than half of travel active

The results showed that an impressive 52% of you come to work by active travel modes, either by walking or cycling, helping you achieve the recommended 30 minutes of physical activity per day.

This figure is well above the average for the Travel for Cambridgeshire employers at 22%. The evidence says that cycling or walking to work helps to improve your physical wellbeing and can have psychological benefits too.

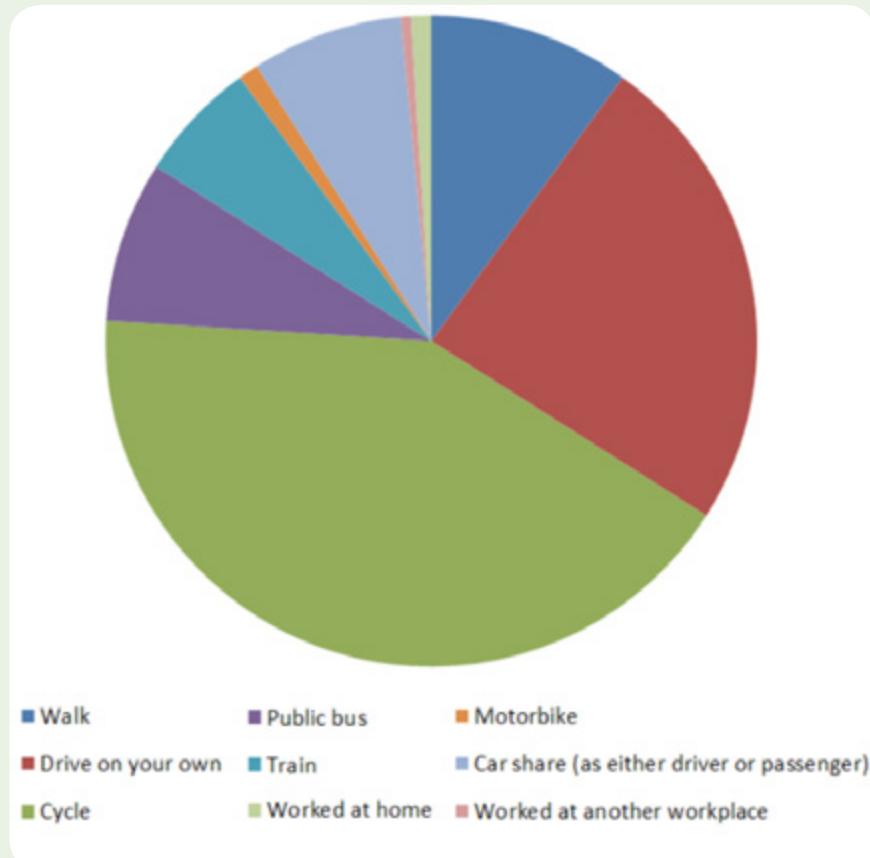
14% come by public transport

A total of 14% came in to work by bus and train on the day surveyed.

Opportunity to car share to save money

The survey found that 8% of our staff car share with other staff and 24% of staff surveyed drive alone to work.

The University is trying to encourage more staff to car share to work instead of driving on their own, to reduce the



congestion on Cambridge's roads and improve the local air quality.

A typical commuter who starts car sharing can save up to £974 a year. If you don't know anyone in your office to share with, log onto <https://camshare.liftshare.com/> and register for the service.

We've set up a private University group especially for staff, designed to help you reduce your daily travel costs while

helping to reduce CO₂ emissions at the same time. Why get involved?

- It is totally free to use and enables you to find others going your way, so you can share the journey.

- You can take turns driving, offer someone a lift (in exchange for a contribution to the fuel costs) or look for someone to give you a lift.

- You don't have to do it every day. It's completely flexible; once you've found others going your way, you decide between yourselves how often it suits you to share.

Discover for yourself just how much money you can save by visiting www.liftshare.com/content/savings_calculator.asp?skin=47.

If you have any questions or comments about your journey to work, please contact the Travel Plan Manager Amanda Holden by email Travel@admin.cam.ac.uk.



Six ways to get ready for spring cycling

It's been a long winter. But the days are getting a bit warmer, and a bit longer, which means it's time to start thinking about cycling again! If you need a bit of encouragement to get out on your bike again, we've got six sure-fire ways to get you spring-loaded...

1. Show your bike some love

Whether your bike's been sat unloved in the shed for a few months, or out on the muddy roads, it probably needs a bit of attention. Get it out, give it a clean, check your brakes and pump up your tyres.

2. Pick a route

A common reason for not starting a ride is not really knowing where to go. If you don't have a destination in mind it can be all too easy to put it off until next week. So just to give you something to focus on, pick a place to ride to – a local

cafe, a park, or perhaps trying out a new route to work. When you can visualise where you're heading, it'll be much easier to get going.

3. Treat yourself to something

Rekindle your love of cycling by treating yourself to something for your bike, or something to wear when you're out on it. Cool new bag to carry? New jacket? Once you have it, you'll want to get out and show it off.

4. Set yourself a target

You don't have to be training for a sportive or a long ride through some gruelling terrain, but setting yourself a target makes it much easier to commit to something. It might be to do ten miles, to do three rides in a month, or to visit somewhere on your bike you've never been to before. And if signing up help that little bit more, why not find a Sky Ride Local, Breeze or Ride Social ride on our website to join?

5. Be prepared for some crazy weather

One minute it's raining, the next minute the sun's out. The weather can be all over the place at this time of year, so



be prepared by taking some tried and tested gear with you. Our Twitter and Facebook community recommends gloves, arm warmers and light rain jackets – all perfect for taking on or off easily if you find conditions changing while you're out and about.

6. Try something new

If you're in need of a certain something to put the fun back into cycling again, why not try something new this spring? How about taking on a mini triathlon, having a go at cyclo-cross, or taking off on your bike for the weekend?

Read more at: <http://bit.ly/1CoKK4f>.

Knitting for comfort

Over the winter months the Green Futures Group in the University Library offered colleagues the opportunity to try their hand at knitting part of one long University Library scarf.

Simple instructions, the beginnings of a scarf already set up on easy-to-use needles, and a variety of supplies of donated yarn were left in the staff tea room and staff encouraged to pick up long lost skills or to discover a new pastime.

Within a short time the UL scarf grew from a humble 50 centimetres to over 2 meters. A range of techniques and different stitches were used as the scarf

grew in length. An experienced group of keen knitters were able to ensure the scarf remained as scarf-like as possible when the odd enthusiastic hole threatened to appear.

Underlying this initiative was a reminder to colleagues that a scarf or sweater when it's cold may help them feel comfortably warm, reducing the need for additional heating, and so supporting the University's aim to

reduce energy and carbon output.

The scarf will now be donated to Wintercomfort.



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