
uclan
University of Central Lancashire
CARBON MANAGEMENT PLAN
2016/2017 Update

HEADLINE FIGURES

The HESA submission for 2015/16 shows the following changes in our absolute carbon emissions based on 2013/14 levels:

- **Scope 1 and 2 carbon emissions have fallen by 23.25%**
- **Scope 3 carbon emissions from water supply have fallen 15.30%**
- **Scope 3 emissions from wastewater treatment have fallen 11.50%**

2016/17 PROJECTS

We have progressed with our programme of replacing existing lighting with LEDs and installing lighting controls. This year we have funded two large-scale lighting projects in C&T Building and Whitendale Halls of Residence.

C&T Building

All teaching space and office lighting has been upgraded to LED and lighting controls installed. We have installed daylight-linked controls that turn the lights off when there is enough natural light. The expected annual electricity savings are at least 67% with annual carbon savings of **49,985** kgCO2e.

Whitendale

Over summer 2017, 51 flats in Whitendale Halls of Residence were refurbished to reduce the number of bedrooms and create a communal area, refresh the kitchen and corridor and create a new shower room. This was a major project run by the Masterplan Capital Project Team (MCPT). Upgrading the lighting in the kitchen/lounge and corridors was not part of the original design specification due to budget constraints so we worked with the Masterplan Capital Project Team, Student Services – Accommodation team and lighting manufacturers and came up with a lighting design paid for out of the Carbon Reduction budget.

Our design replaced the fluorescent lighting in the corridor with LED spotlights and installing a PIR sensor to cut down on energy waste from the corridor lighting being left on. In the kitchen, we replaced the fluorescent strip lights with LED and the bedroom originally had a compact fluorescent light also replaced with LED. We also arranged for microwave sensors to be installed in the separate toilet to reduce energy waste.

This was a large investment from the Carbon Reduction budget and we are expecting to save annual electricity savings of at least 71% and a carbon saving of **36,956** kg CO2e

Livesey Cafe

As part of a larger refurbishment, we upgraded the lighting in Livesey Cafe to LED with an expected electricity saving of 78%. This is an expected annual carbon saving of **1,153** kg CO2e. As there is a lot of natural light in this area, we installed lighting controls to measure the amount of light coming in and switch the lights off when there is enough natural light as well as PIR sensors to prevent energy waste. These controls will increase the savings further.

Hanover

The lighting in room 211 has been upgraded to LED. This upgrade has an expected electricity saving of 78% and an expected annual carbon saving of **5,186** kg CO2e.

Leighton

The lighting in room 303 has been upgraded to LED. This upgrade has an expected electricity saving of 39% and an expected annual carbon saving of **928** kg CO2e.

Harris Moot Court

The Moot Court is one of UCLan's high profile spaces and it was felt that the lighting was not adequate for the space. We have upgraded all the lighting to LED with an expected electricity saving of 88% and an expected annual carbon saving of **2,744** kg CO2e. We involved the space users at the start of the project and they have given incredibly positive feedback about the new lighting.

External Lighting

When any external light fails, we are now replacing them with LED rather than metal halide. In the past year we have replaced 20 external lamps which is an electricity saving of 57% and an annual carbon saving of **1,255** kg CO2e.

HVAC controls

In August 2016, we installed inverters and controls to two AHUs in Brook building. Previously the HVAC system was running most days between 9am and 5pm, the new controls ensure that the HVAC only runs when the rooms during occupation. The savings have been monitored over the past year and the average monthly electricity saving is 9%. This equates to an annual carbon saving of **3,209 kg** CO2e.

Metering

In January 2017, we installed 54 sub-meters in Greenbank Building and are in the process of creating a baseline from the data we are receiving. Greenbank Building was identified because the out of hours electricity consumption is excessively high and night audits have not been successful in locating the problem.

We will be working with the building users to bring the overall electricity consumption down and will report on this project in next year's update.

Hand dryers

We have installed a further six Dyson V blade hand dryers across campus with an annual carbon saving of **19 kg** CO2e.

WATER

One of our aims, objectives and targets from the **Carbon Management Plan 2015-2020** is 'enhanced monitoring and targeting to identify energy waste' and we currently have 107 channels of data for electricity, 191 channels for gas and 27 channels for water to enable us to do this. Our energy management software helps us to keep track and monitor the consumption across campus. For example, the graphs below shows two instances, over the past 12 months where the water consumption data has increased, the source of the problem dentified and resolved.

Fig 1. This leak would have cost the University an additional £3500 per year and an additional **404** kg CO2e had it not been identified by the energy management software.

Fig 2. This leak would have cost the University and additional £843.15 per year and an additional **97** kg CO2e had it not been identified by the energy management software.

Fig 1

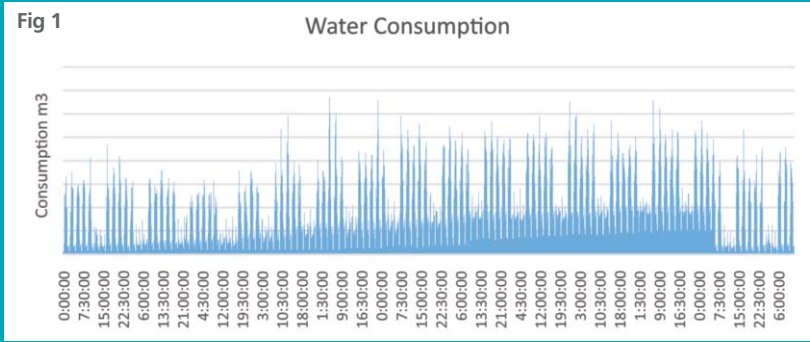

Fig 2

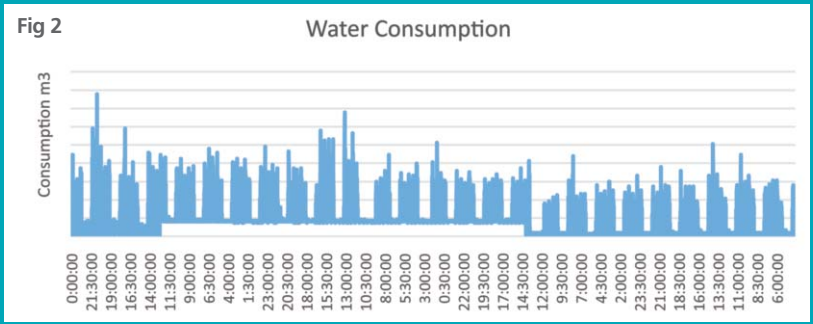

Fig 3

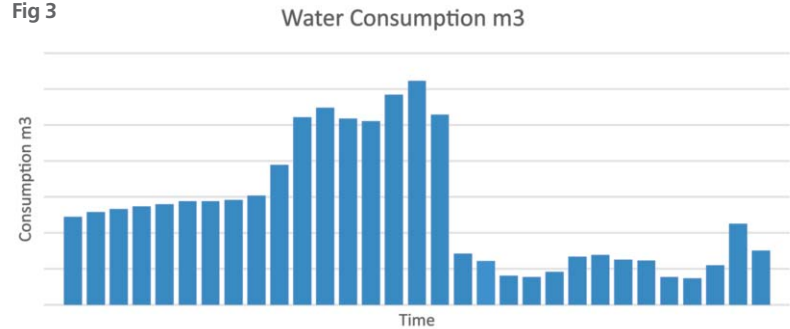

Fig 3. Another example above shows how the water increased over summer 2017 in an empty Halls of Residence. The problem was identified, resolved and the consumption reduced by 27%. This rise in consumption would have cost the University an additional £4200 per year and an extra **1,456** kg CO2e had it not been identified by our energy management software.

The 2017/18 Carbon Management Plan update is due to be released in September 2018.

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