

The Environment Committee was set up in Michaelmas Term 2011 and aims to bring together expertise, energy and ideas from staff, students and fellows to help reduce the College's environmental footprint. Thanks to many people's ideas and hard work our fifth year has seen substantial improvements in energy use and waste management, significant cost savings, new innovations around the May Ball and on biodiversity in the College grounds, and a very impressive performance in the cross-University Green Impact awards scheme.

Energy

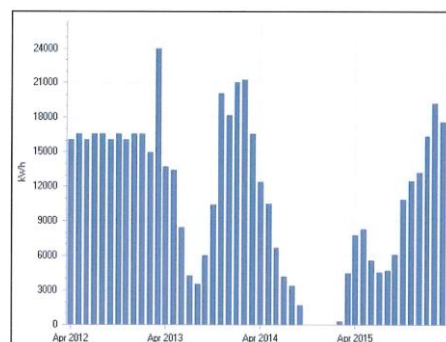
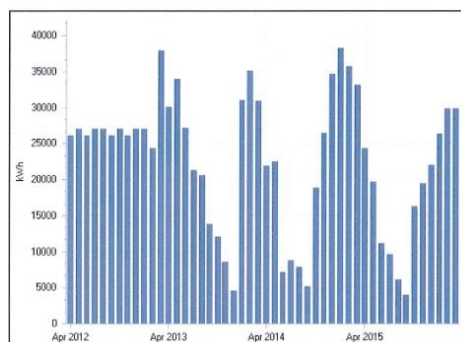
1. Buildings Manager Deborah Hoy and her team have installed LED candle bulbs into all the chandeliers and wall fittings in Old Court. Energy savings mean this investment should be repaid within 2 years. Because the bulbs should last 20 years, staff time will also be saved, and health and safety improved - although by 2035 finding someone who remembers how to change a lightbulb may be tricky.

2. UCS (in the form of Green Officer Amy Carmichael) and Accommodation Manager Jackie Searle have again worked together to run a Michaelmas term energy-saving competition across Memorial Court and the Colony. Bedders recorded lights and appliances left on unnecessarily and heating left running with the windows open, and the staircase that wasted least energy won free tickets to the Michaelmas Green Formal Hall. Electricity consumption in Memorial Court was 7.9% lower in 2015-16 compared to 2014-15.

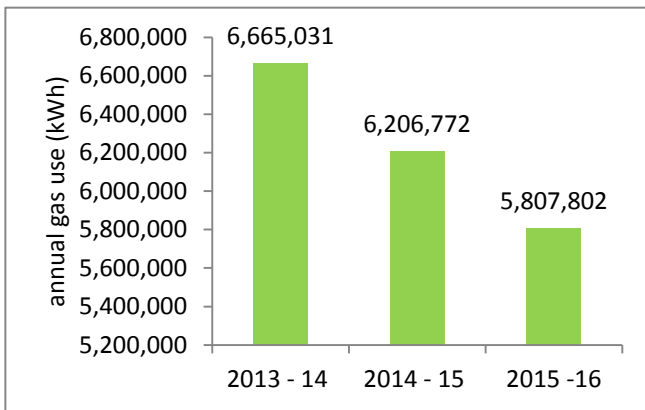
3. Deborah and her team have continued to oversee upgrades to the College's boilers, and to track their impacts. Boiler replacements to Netherfield Flats resulted in an estimated 40% reduction in gas consumption. More recent replacement of the boilers at Castle House has led to a ~40,000 kWh reduction in gas use (saving ~£3000) in just 6 months, on top of an annual ~70,000 kWh reduction through changes in heating schedules. Likewise, after improving the insulation and replacing the boilers during the Castlebrae refurbishment there's been a 30,000 kWh reduction

in gas use over 12 months - despite the number of student rooms increasing from 19 to 26

(suggesting a 41% fall in gas use per student).



Monthly gas consumption (in kWh) at Castle House (left) and Castlebrae (right), 2012-16. Note the period when Castlebrae was closed for refurbishment.



4. Together these changes to how Clare is heated have led to a fall in the overall gas consumption of the College buildings in 2015-16 of 6.4% compared with 2014-15, and 12.8% compared with 2013-14. Our 2015-16 gas bill was thus more than £65,000 lower than it would have been without the reductions in use achieved since 2013-15.

Annual College gas consumption (in kWh), 2013-16.

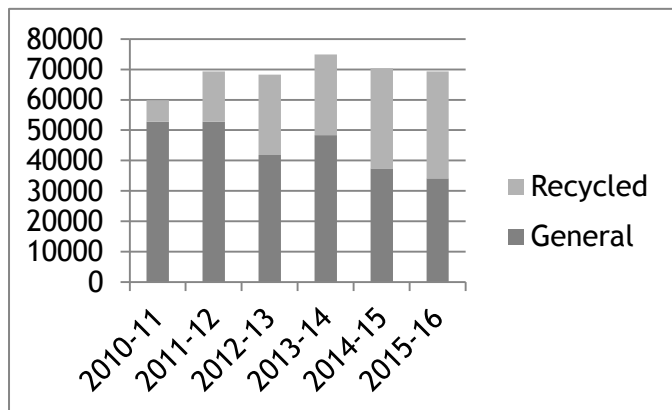
Waste

5. Jackie Searle and her team have continued to improve the College's already impressive record of recycling waste. All student rooms, gyp rooms and offices have been supplied with recycling bins and the number of general waste bins has been reduced. The effect can be immediate - as these photos taken before and after changing bin provision in the library illustrate.



Daily waste from the Forbes Mellon library, before (left) and after changing bin provision. Green bags are recycling; photos were taken one day apart (photos: Jackie Searle).

6. As a result this year the College again produced less general waste than ever recorded before, and for the first time we recycled over half of all waste. Because collection charges for recycled waste are lower, this effort saved College approximately £8300 this year (compared with the cost if we had produced our 2015-16 level of waste but recycled at 2010-11 levels).



Waste (in litres) produced each week in College.

7. Jackie has also pioneered the uptake of British Heart Foundation's end-of-term scheme for collecting and re-using student's unwanted household items. Almost half of what used to fill a skip for landfill is now collected by BHF.

End-of-term collection for British Heart Foundation (left) means far fewer unwanted household items now get sent to landfill via a skip (right) (photo: Jackie Searle).



8. Head Gardener Steve Elstub has pushed on with his team's use of green bins instead of skips for non-compostable waste. Together these efforts to cut skip use have saved the College over £7000 in 2015-16, compared with 2014-15.

Catering

9. Catering manager Lee Corke has worked with the UCS and MCR reps this year to host two Green Formal Halls. The events included talks by outside speakers, offered vegetarian- or vegan-only food, and proved extremely popular. A Green Garden Party is being planned for May Week.

10. Thanks to Lee, Clare was in the first wave of colleges to sign up to Sustainable Fish Cities, a nationwide initiative in which catering outlets pledge to avoid buying unsustainably-sourced fish.

11. Consumption of meat and dairy products continues to be a concern to the Committee, as these have a far greater environmental footprint than other food items (accounting for more of the average US or European family's greenhouse gas emissions than does air travel - Jones & Kammen 2011 *Env. Sci. Technol.* 45:4088). Because they come from ruminant animals, beef and lamb are especially significant, with a greenhouse gas footprint per serving of around 6 times that of poultry or pork and ~100 times that of many vegetable proteins (Tilman & Clark 2014 *Nature* 515:518).

12. Lee has instigated a detailed system to track Clare's purchases of meat, which reveals that the steep increase seen in 2014 has now apparently levelled-off. Intriguingly the rise was driven very largely by increased meat-buying during the conference season: term-time purchases have been largely static, while July-Sep purchases rose by one-third in two years, and are 60% higher (per month) than those in the rest of the year. Around 28% of meat purchases are of beef or lamb.

13. Encouragingly, awareness of these issues among students seems to be growing. Vegetarian options accounted for 40% of all meals sold in the buttery in 2015 (up from 35% in 2013). In a UCS ballot held in March 2016 66% of respondents (55% of all UCS members) said they wanted beef meals to be served in the buttery no more than once a week. The Committee plans to examine how this concern can translate into practical changes over the next year.

Biodiversity

14. A team of MCR members led by Olly McMillan conducted the first ever survey of biodiversity across the College estate. This was a great addition to our Green Impact submission, and produced some important recommendations about the increased use of native plants typical of Cambridgeshire habitats, and the possibility of enhancing the woodlands and softening perimeter management at the sports ground. These recommendations will be taken to the Gardens Committee.

May Ball

15. As well as helping with energy saving, recycling and Green Formal Halls, UCS rep Amy Carmichael has come up with the very imaginative but hugely challenging target of making this year's Clare event the first ever carbon-neutral May Ball. Innovations range from cutting waste by using kegs rather than bottled beer through to offsetting all residual emissions through the charity Cool Earth. Given the high profile of May Balls this idea obviously has tremendous potential to raise awareness of the point that reducing one's footprint needn't preclude having fun.



Webpage for this year's Clare May Ball.

External recognition

16. The College has again received very encouraging external recognition of its work on the environment. In June it won awards in 3 out of 4 possible categories in the University-wide Green Impact competition. Overall, Clare again received the highest merit - a Gold Award. The team, led by Deborah Hoy, was also runner-up in the Best Environmental Improvement category, for the inter-staircase energy-saving competition; and outgoing UCS rep Jamie Osborn won the Student Leadership Special Award, for all his proactive work during the year, including the staircase competition and his work on fair trade.



Committee members at the June 2015 Green Impact awards

17. We have just heard - ahead of the 2016 Green Impact ceremony - that Clare has received a Gold Award, for the third year running.

Committee members, 2015-16

Andrew Balmford (Chair)
Amy Carmichael (UCS Green Officer)
Lee Corke (Catering Manager)
Steve Elstub (Head Gardener)
Andrew Friend (Fellow)
Deborah Hoy (Buildings Manager)
Aleksandra Lewicka (MCR Representative)
Sam Ludford (Staff Representative)
Jackie Searle (Accommodation Manager)
Nigel Woodcock (Fellow)
Paula Yardy Saban (Committee Secretary)