

Report Summary: Energy use in student rooms

Kate Belford, October 2015 – March 2016

Overview: Assessment of the temperature of students' rooms alongside surveys on thermal comfort and opinions on heating.

Aims: The ultimate aim of this study was to promote the conservation of energy.

Process/methodology: Measured internal room temperature of 14 rooms across 2 colleges using probes over the course of a week; external temperatures were gathered from the Cambridge Computer Laboratory weather station archives; volunteers whose rooms were measured recorded their thermal comfort over the time being measured; an online survey was completed by 75 students regarding thermal comfort, heating in rooms etc; statistical analysis was carried out on the results.

Results: The temperature probes in student rooms gave an average room temperature of 22.4°C, with no significant difference between the colleges measured. The maximum temperature was 27°C and the minimum was 16°C. External temperature averaged 8°C when college A was recorded and 0°C when college B was recorded. There was no significant relationship between internal and external temperature. There was a spread of opinions about thermal comfort amongst those who responded to the survey, with answers ranging between too cold and too hot.

Recommendations: Provision of education, feedback, and possibly an increased control over heating may help to reduce energy from students' rooms in colleges (these recommendations are based on the literature review rather than the results of the study).

Conclusions: This project was particularly limited by time and equipment constraints, meaning that fewer measurements were made than is ideal. The data is not representative enough of the university population to draw general conclusions.

Next steps: Further research could carry out a wider study, measuring more rooms and sending out the survey to all undergraduates. A further study could make some additional recordings to better investigate the effects of physical properties of the buildings e.g. colleges could provide information about building dates, insulation standards and renovations. Students could also record behaviour when their room temperature is measured, such as recording whenever a window is opened or heating settings are altered.

Further information: [E: drive link](#).

About you: *Kate Belford, Natural Sciences, 2nd year undergraduate*

Motivation: *I wanted to complete this project as heating in student rooms was something I was already interested in, after spending a year in a room that was always excessively hot. I learnt just*

how much energy heating uses, and so thought that undergraduate rooms, such as my first year room, could be an opportunity to save a lot of energy.

Personal outcomes from project: *I developed my organisational skills, as the majority of data collection involved communicating and passing the probes between volunteers I sourced. Mostly though, this project has improved my statistics, which I had never really done independently in a real life context before.*

On a scale of 1-5 how motivated are you to do further work on environmental sustainability?: 5
- it's made me see how small changes we can make in our own lives can have a difference.