

CASE STUDY

Corpus Christi College



45% savings

Corpus Christi
College Oxford

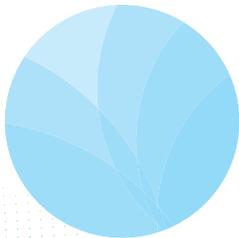


CLIENT OVERVIEW:

Corpus Christi College is a constituent college of the University of Oxford which includes a number of housing and accommodation buildings across Oxford.

PROJECT OBJECTIVE:

To reduce energy costs and carbon emissions in the student accommodation.



The Higher Education Sector often operate with tight budget constraints, yet £millions can be wasted on unnecessarily heating empty rooms, taking money away that could otherwise be invested into ground-breaking research.

There are a wide variety of possible measures institutes can implement to reduce their heating demand and conserve energy: cavity wall insulation, energy efficient windows, thermal cladding.

However, all of these fabric improvements incur significant up front costs, involve a complex procurement and permissions process, and require incredibly disruptive retrofit installation practices.

It was these barriers that lead Corpus Christi College to EcoSync's cloud-based platform.

The devices record 32 pieces of data every 5 minutes, including the air temperature, the radiator valve position and the hot water flow temperature. These give an accurate view of how much energy the bursary building is using on a room-by-room

basis, in real time. Data which is fed into EcoSync's machine learning models that predicts how much energy is needed to heat any given room. If a specific room is unoccupied it does not need to be heated, and the energy saved is displayed on EcoSync's Carbon Meter.

Thanks to in-room scannable QR codes, these savings are not only visible to facility managers, but also the building occupants. Encouraging environmentally and fiscally responsible behaviour by allowing for the day-to-day users of the building to directly see how even small actions, such as closing a window that was left open, can lower energy use and reduce carbon footprint.



**STOP HEATING
EMPTY ROOMS**



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THE SOLUTION

A retro-fitted, easy to install, heat management system that allows remote and individualised control of heating via a simple-to-use dashboard. Accessible from anywhere at any time, allowing building managers to set schedules and monitor heating from one centralised platform.

INSTALLATION TIMELINE

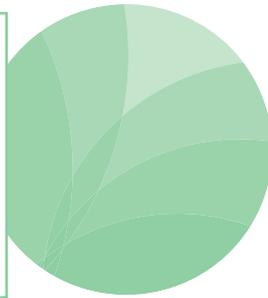
JANUARY 2022:

No. 68, Banbury Road – **32 devices** across the building's four floors

CURRENT COVERAGE WITH US:

354 devices over 11 buildings

Corpus Christi instantly noticed considerable reductions in consumption when comparing their gas bills. Subsequently rolling out the EcoSync solution across more of their estate, initially expanding their 32 smart controller system by an additional 322, with discussions underway for a further 150 controllers.



THE RESULTS

From January 2022 – October 2022 EcoSync saved Corpus Christi College:

25,056
KWh of energy

That's the equivalent of:

Preventing

1,650kg

of carbon being released into the atmosphere

66 Trees

absorbing carbon for a year

Overall savings:

45%
energy saved

3 POINT VALIDATION

Baseline Consumption Methodology

In St. Peters College, we compared to a heat meter which directly measured the heat output of the boiler. The heat meter measured all hot water usage, including the hot water required for showers and kitchens, so did not directly tell us heating energy consumption.

However, we used the months of term time outside the heating season to estimate the breakdown of energy consumption between heating and hot water, and found it was:

45% heating – 55% hot water

Applying this breakdown, we found that their heating energy consumption was 18.64 MWh from January to March 2022, and our digital twins predicted 19.85 MWh over the same period – **an accuracy of 94%**.

Control Building

From January to March 2022, Corpus Christi College installed EcoSync in one of two identical student accommodation buildings.

They found that their gas bill was considerably lower in the building with the EcoSync solution installed, compared to the building without:

January: 27.3% saving

February: 32.4% saving

March: 45.9% saving

We had initially predicted a saving of 27% using conservative assumptions about how our technology could be used, and were pleased to see that users and building managers quickly adapted to achieve even better results.

EPC Comparison

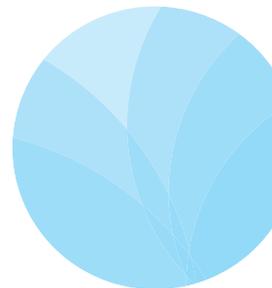
At Lady Margaret Hall College, we used our digital twins to estimate the total energy consumption, without the use of the EcoSync solution:

285 kWh / m2 per year (heating & hot water)

We compared this to the Energy Performance Certificate, which stated a total energy consumption of:

309 kWh / m2 per year (heating & hot water)

An accuracy of 92%.



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