

Case Study 1

PPP Schools Project

Introduction

The Council have been working with their SPV responsible for 8 primary and secondary school PPP projects within the Council's estate, to explore Energy Conservation Measures over the last 3 years.

Through collaboration across the Council and SPV team, the FM Contractor has led in undertaking energy audits at their own cost to identify a range of potential ECMs across each of the facilities. This work was done as part of the Council's ambitions around addressing climate change.

Stakeholders Involved:

- > SPV
- > FM Contractor

How long did the project take?

The projects have been developed over the course of 3 years, however this timescale was prolonged due to the disruption caused by COVID 19, and its impact on the usage of the schools and subsequently the energy consumption.

What was the challenge to be addressed?

The key challenge that drove this action was making a contribution to reducing the carbon footprint of the school estate as part of the wider Council property

estate. The Council had implemented ECMs across its retained estate resulting in the PPP estate forming a more significant portion of its carbon footprint.

What were the key drivers?

The Council's ambition to reduce its emissions footprint and making a demonstrable contribution to the Council's carbon reduction strategy, targets and approach to addressing climate change.

Key lessons learned for sharing?

The key lesson in this case is the power of actively engaging in collaborative work with a focus on decarbonisation. In addition the ability to test projects, build confidence across all parties and lead effective replication of measures which were proven to deliver success.

What was achieved?

The figures below summarise a number of the ECM opportunities identified as part of the initial collaborative audit process:

Energy Conservation Measure	Energy Savings/ Grid Offset (kWh/Year)	Energy Savings (£/year)	Carbon Savings (tCO ₂ e/Year)	Payback Year(s)
 Pipework Insulation	217,702	£5,442	40	3.2
 Recommission/Replace Pumps	84,694	£12,281	2	1.3
 Upgrade Lighting to LED	892,192	£130,260	208	8.8
 Solar PV Installation	943,250	£144,139	220	10.4
 BMS Software Upgrades	1,092,199	£72,943	220	N/A

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Net Zero Carbon for Operational Energy

From the ECM projects identified, a number have subsequently been developed and delivered by Project Co as part of their lifecycle and maintenance responsibilities with benefits realised for both parties. These include:

> Replacement of Single Speed Pumps with Variable Speed Pumps

As part of the energy audits and subsequent annual M&E Condition Surveys, the FM provider identified a programme of replacement of Single Speed Pumps from summer 2021 onwards to be replaced with Variable Speed Pumps. Similarly any Single Speed Pumps that fail prior to their planned replacement will also be replaced with Variable Speed Pumps with immediate effect.

> LED Lighting

The FM provider have committed to a 5 year rolling programme to replace all existing fluorescent and other non-LED luminaires throughout the schools with new LED fittings and lamps, as part of a Lifecycle Replacement programme.

> BMS Upgrades

Work began on upgrading the BMS Systems at the two secondary schools in 2020. The work saw the replacement of the existing 'closed' HVAC plant controllers with new open protocol controller systems, the creation and installation of new software and displays to allow full control of Plant Items and associated Field Equipment, the replacement of sensors, the upgrading of AHU Control Panels and Under Floor Heating Control Panels, the installation of new Network Interface Controllers and the supply of a new BMS PC in each School installed with Supervisor Software to better monitor and record performance.

A plan for the primary schools is now also in place for the next few years, improving the accessibility, functionality and monitoring of energy systems and their performance.

Future Capital Works

The Council are currently assessing the opportunity for capital investment project opportunities to further upscale and accelerate investments in the estate, including solar PV and heating system decarbonisation opportunities.