CASE STUDY

Helping convert a Grade II listed “energy eater” to net zero

APPROVED CONTRACTOR:
Cambridge Flat Roofing Co Ltd

CLIENT:
Ergo Group for London Borough of Camden

The purpose:

London Borough of Camden is aiming to have net zero carbon emissions by 2030 and has already achieved a 61% reduction against its 2009/10 baseline. To continue to deliver on its pledge, it targeted one of its most energy-inefficient buildings, Swiss Cottage Library.

The aim of the £2.8m refurbishment in part funded by the Public Sector Decarbonisation Scheme was target savings of 55 tCO2e and £25,000 in energy costs per year, primarily by upgrading the roof which was poorly insulated and failing, the single-glazed Georgian wired north lights and windows, and fluorescent lighting.

Principal contractor Ergo Group had to be mindful of the listed status of the library which prevented alteration of the existing façade, including the low parapet wall around the roof. It also had to bear in mind the impact of carbon emissions from the refurbishment. Further, the library would remain open/live throughout the refurbishment.

Solution considered the ability to retain embodied carbon within the existing system reducing waste to landfill.

Our solution:

We devised a scheme whereby the existing waterproofing was overlaid with our TA Flat Roofing System of layered mineral felt. To achieve the target U value of 0.18W/m2K, in view of the clearance constraints we specified 60mm vacuum-packed insulation. This solution considered the ability to retain embodied carbon within the existing system reducing waste to landfill.

We worked closely with the supplier to design and install double-glazed rooflights with automatic opening louvres to replace the 25no. Georgian wired northlights. The original zinc cladding to the northlights and stairwell we refurbished with reinforced PMMA liquid waterproofing.

The result:

The project is exemplar in showing how heritage and energy conservation can go hand in hand.

The works undertaken have more than doubled the building's reduction in carbon, by 138 tCO2e per annum. Combined annual energy savings are predicted to exceed 727,700kWh. This has been achieved from a now fully insulated roof, double glazing, LED lighting, an air source heat pump and solar panels.

Embodied carbon has also been minimised, in part through the overlay of the existing roof material. This reduced waste to landfill, and the emissions from its associated transport.

The upgrade has retained the historic façade, whilst improving the health & wellbeing of the building's users through better natural and low-energy light, and improved ventilation via the automatic louvres in the northlights.

Through close collaboration, agile working and attention to detail, the team delivered the refurbishment on time and within budget. A hands-on approach, excellent communications and weekly site meetings mitigated risk and enabled any unforeseen alterations to the original scheme to be determined and approved.

A carefully managed programme of works, delivery schedules with careful methodologies and appropriate safety measures gave staff and library users optimum protection throughout the works whilst minimising disruption to the local community.

"The technical and site support from Langley was invaluable in delivering the roofing element of the project successfully in all aspects."

Ergro Group chairman

For more information get in touch with our specialists

01327 704778

contactus@langley.co.uk

Langley UK Limited

Lamport Drive, Heartlands Business Park,
Daventry, Northamptonshire,
NN11 8YH