



Insulating Non-Traditional BISF Properties

Client: **Cambridge City Council**
Measure: **External Wall Insulation**
Location: **Foster Road, Cambridge**
Date: **2009**
Value: **£130,000**

CORNERSTONE



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The Challenge

British Iron and Steel Federation (BISF) houses are of non-traditional construction built post-second world war and are typically semi-detached. The steel frame of these buildings sits within a wall cavity, with plasterboard forming the internal walls. The ground floor external walls are rendered concrete blocks reinforced with steel, while ribbed steel sheeting forms the first floor façade.

BISF houses commonly suffer from poor airtightness and are hard to heat, while the steel frame is vulnerable to corrosion. Cambridge City Council's housing stock comprises a number of BISF houses built in 1950, including those in Foster Road.

Cornerstone was appointed by the council's main contractor to identify and install a suitable external wall insulation solution to these properties, in order to improve their thermal efficiency, lifespan and aesthetic. External wall insulation is a good means of insulating BISF properties without risking condensation near the steel frame, and thereby creating future structural problems.

Our Solution

Cornerstone worked with expert manufacturer Weber to select the webertherm XP external wall insulation system for this project.

Prior to application of the Weber system, the steel frame was checked for signs of corrosion and joints replaced wherever necessary. A combination of techniques were adopted to install the external wall insulation to the difference surfaces substrates.

On the ground floor, the existing render coating wasn't capable of taking a mechanical fixing pin. We therefore removed the existing paint finish to leave a smooth and bare render finish, and stuck the EPS insulation boards to this surface using an adhesive mortar. On the first floor, the boards were fixed with steel screws directly to the metal sheeting.

Once in place, the insulated render coating webertherm M1 was sprayed directly onto the boards, creating a smooth and uniform finish across both storeys. Powder coated metal window cills were also specifically manufactured to match and refresh the previous set, completing the transformation.

Facts & Figures

Built between 1946 and 1952, there are between 30,000 and 40,000 BISF houses in the UK

The Result

In total, ten BISF houses were insulated using funds provided by the local authority. Cornerstone managed the end to end process, liaising with residents, neighbours, the main contractor and representatives of the local authority to ensure high levels of compliance and satisfaction across the board.

The insulation works were completed on time and budget and to an extremely high technical standard. The insulating effect of the Weber system significantly reduced the u-values (measure of thermal transmittance) of the walls, from 1.80 W/m²k to 0.3 W/m²k. This has in turn reduced the residents' energy bills and improved their thermal comfort.

In addition, the project has transformed the street scene in Foster Road. The difference between the aesthetic of the properties prior to and after the external wall insulation is remarkable, with the improvement warmly welcomed by residents and the wider community.

