



Frankley
Birmingham

Sector: Social Housing
Low Rise
Refurbishment



Before



After refurbishment



Before

Client:
Birmingham City Council

Building Type:
Timber Framed Houses

Project Size:
27 Houses / 2470m²

Product:
Structural Insulated
Cladding
& Render Finish

Project Background:

Structherm has been working closely with Birmingham City Council on its large scale, five year, housing refurbishment programme. The scheme involves around 68,000 properties of which 12,000 are of non-traditional construction encompassing over 40 different building types.

The council had 27 non-traditional houses in Frankley, Birmingham which were built in the 1970's using a timber load bearing frame with a brick external skin to the ground floor and cladding tiles, containing asbestos, to the first floor.

There were several reasons why the houses required external refurbishment, these included corrosion of the wall ties which were failing making the houses structurally unstable. The cladding tiles were in a bad state of repair with many broken or missing, resulting in large areas of the walls being exposed to the ingress of rainwater, causing damp and condensation. The detailing between the cladding and the brick on the ground floor was poorly designed with water being channelled onto the brick causing deterioration of the top three courses. The houses also had very little insulation therefore thermal performance was poor.

Client Requirements:

The client wanted a cost effective solution for externally refurbishing the houses and one that would:

- Solve the structural problems associated with failed wall ties
- Create a watertight and thermally efficient building envelope
- Reduce CO₂ emissions and lower residents fuel bills
- Improve the external appearance of the houses

Design Solution:

Structherm's unique Structural Insulated Cladding system incorporating 55mm thick Expanded Polystyrene was chosen for the external refurbishment of the properties as it was the most cost effective solution. The houses were first stripped of the cladding tiles and the system then installed to the first floor. Once this was complete the ground floor brick skin was removed and the structural insulated cladding system installed. This method allowed a rigid, continuous envelope to be installed around the properties with real structural integrity without the need to put in expensive foundations.

To complete the system a traditional Macerend brick effect render finish was applied to the ground floors and FlessCoat Cortina Normale TH acrylic render in cream was applied to the first floors to achieve a fresh contemporary appearance.

Results:

- The Structural Insulated Cladding has solved the structural problems associated with the failed wall ties.
- Thermal performance has improved greatly with the U value dropping from 0.45W/m²K to 0.28W/m²K.
- The carbon footprint of each house has reduced by virtue of requiring less fuel to heat them to a comfortable temperature. This has also had the positive benefit of reducing fuel bills for residents
- The aesthetic appearance of the properties has greatly improved with the refurbishment programme which included new windows, doors, roofs, soffits, fascia boards and guttering.

