Structherm
STRUCTURAL INSULATED FACADES

Rosshead Flats

Halkett Crescent &
Colquhoun Drive,
Rosshead,
West Dunbartonshire

Sector: Social Housing
Medium Rise
Refurbishment


After refurbishment


Before refurbishment


After refurbishment

Client:
West Dunbartonshire Council

Building Type:
Wimpey No-fines Concrete

Project Size:
6,300m² in 10 x 5 storey blocks
3,179m² in 3 x 3 storey blocks

Product:
- Structural External Wall Insulation & Dash Finish
- Wonderwall - Real Brick Slip Cladding to Ground Floors

Project Background:

West Dunbartonshire Council (WDC) is going through a programme of upgrading its Social Housing helping to bring them up to Scottish Quality Housing Standards by 2015.

Within their stock WDC has ten blocks, five storeys high and three blocks, three storeys high which have been surveyed by structural engineers and found to have structurally sound concrete frames but failing concrete infill. The buildings also had extremely poor thermal performance resulting in high fuel bills for residents, pushing them into fuel poverty and were very unsightly.

Client Requirements:

WDC wanted to refurbish the blocks in order to extend their life by 30 years to comply with their long term Local Housing Strategy. As part of the external works WDC required a solution that would:

- Solve the structural problems associated with the failing concrete infill
- Improve thermal performance and therefore cut fuel bills
- Improve the external appearance of the buildings

Design Solution:

Structherm's unique Structural External Wall Insulation (SEWI) and Wonderwall systems were specified for the external refurbishment of the building as they were able to offer solutions to each of WDC's requirements.

The SEWI system is based on the performance of a unique, lightweight stainless steel wire space frame with a 105mm Phenolic insulation core. The vertical panel spanning method was used to provide a rigid, continuous envelope around the upper floors of the buildings.

To complete the system a 14-16mm layer of fibre reinforced basecoat followed by a 8-10mm layer of dash receiver and dash aggregate were applied. This finished layer provided the buildings with an attractive façade that fully met the client's aesthetic expectations.


After refurbishment. Photo shows Wonderwall to ground floor.

On the ground floor and to detailing areas Wonderwall, an insulated real brick slip cladding system, was chosen because of its robustness and impact resistant properties. The system comprised of a rigid 25mm thick phenolic insulation panel pre-bonded to a brickwork coordinating carrier sheet plus an additional layer of 60mm Phenolic insulation. Autumn Glow brick slips were then fixed to the carrier sheet using a purpose made adhesive.

Results:

- The SEWI has stabilised all the failing concrete infill and anchored back areas of loose material.
- Thermal performance has improved greatly with the U value of the walls dropping from 1.83W/m^{2}K to 0.21W/m^{2}K.
- The carbon footprint has reduced as it now requires less fuel to heat each flat to a comfortable temperature.
- The fresh, contemporary design of the buildings has transformed the appearance of the blocks into modern and attractive buildings.


After refurbishment. Photo shows Wonderwall to ground floor and detailing areas above doorways.

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