Structherm
STRUCTURAL INSULATED FACADES

Glencairn Court & Gallowhill Court

Paisley, Renfrewshire

Sector: Social Housing High Rise Refurbishment

Client:
Renfrewshire Council

Building Type:
Wimpey No-fines Concrete

Project Size:
2 Blocks 6,000m²

Product:
- Structural External Wall Insulation & Render Finish

Project Background:

Renfrewshire Council 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 they had two Wimpey No-Fines concrete high rise blocks which were found to have structurally sound concrete frames but failing infill concrete. The buildings also had extremely poor thermal performance resulting in high fuel bills for residents, pushing them into fuel poverty. Due to the variable nature of no fines concrete these property types are not suitable for standard insulation fasteners given the high wind loads experienced on high rise residential blocks.

Client Requirements:

Renfrewshire Council wanted to transform the blocks and so invested £6 million into a refurbishment programme which included external works that would:

- Solve the structural problems associated with the failing infill concrete

- Improve thermal performance and therefore cut fuel bills

- Improve the external appearance of the buildings

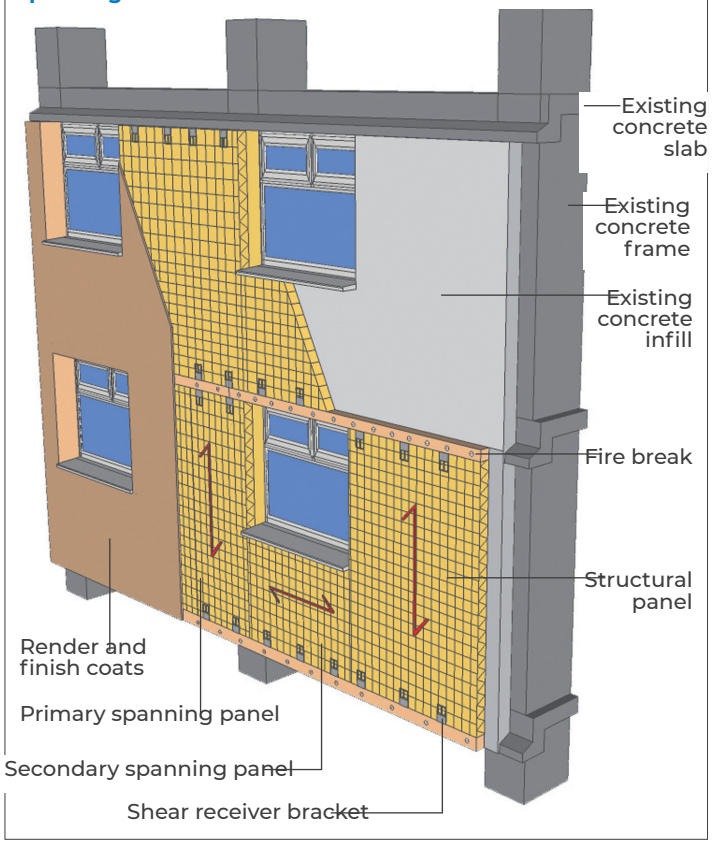
Design Solution:

Structherm's unique Structural External Wall Insulation (SEWI) system was specified for the external refurbishment of the building as it was able to offer solutions to each of Renfrewshire Councils requirements.

The SEWI system is based on the performance of a unique, lightweight stainless steel wire space frame with a 100mm Phenolic insulation core. The vertical panel spanning method was used to provide a rigid, continuous envelope around the upper floors of the building (see illustration below).

To complete the system a 14-16mm layer of fibre reinforced basecoat followed by an 8-10mm levelling coat and then a contemporary high performance Silicone finish was applied in a striking design using white and blue render. This finished layer provided the buildings with an attractive façade that fully met the client's aesthetic expectations.

Detail showing fixing method for high rise vertical panel spanning



Results:

- The SEWI has stabilised the failing infill concrete and anchored back areas of loose material.

- Thermal performance has improved greatly with the U value of the walls dropping from 1.46W/m²K to 0.20W/m²K.

- 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 along with enclosed balconies, new windows and entrance upgrades has transformed the appearance of the blocks into modern and attractive buildings.

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