



**Kennishead High Rises**  
Kennishead Avenue,  
Thornliebank, Glasgow

**Sector:** Social Housing  
High Rise  
Refurbishment

Before



**Client:**  
Glasgow Housing  
Association

**Building Type:**  
Wilson Concrete Block  
Panel

**Project Size:**  
3 Blocks 15,000m<sup>2</sup>

**Product:**  
Structural External Wall  
Insulation & Render Finish

After refurbishment



### Project Background:

Glasgow Housing Association (GHA) is one of the largest social landlords in the UK, with more than 45,000 tenants across Glasgow. Since stock transfer from the city council in 2003, GHA has invested more than £1.2 billion in modernising and improving tenants' homes across the city.

Their investment programme, now in its final three-year phase, will continue to meet national policy objectives, such as the Scottish Housing Quality Standard (SHQS) and reducing the nation's carbon footprint with an investment of £240 million between 2011-2014.

Having completed various phases of refurbishment works on both low rise and high rise properties using Structerm external wall insulation (EWI) systems, GHA decided to use them again for three Wilson Block Panel high rise blocks of flats in the Kennishead area of Glasgow.

The blocks were constructed with a concrete frame and double panelled concrete cladding infill panels (see photo below). It was these infill panels which were beginning to fail due to the poor quality concrete used. Pull out tests on them also proved to be unsuccessful therefore fixing a standard EWI system to them would not be feasible.

### Client Requirements:

GHA wanted to externally refurbish the blocks to the highest standards providing comfortable, safe and economical to run homes for its residents. GHA required a solution that would:

- Solve the structural problems associated with the failing concrete panels and inability to fix directly into them
- Improve thermal performance and therefore cut fuel bills
- Improve the external appearance of the buildings



Double panelled concrete infill panels.



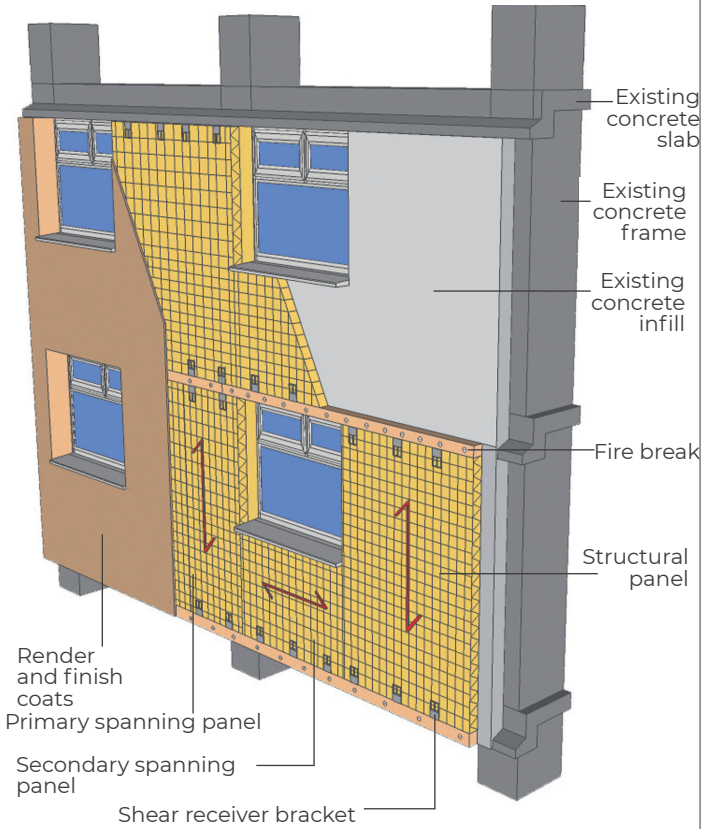
Weak concrete panels.

### Design Solution:

Structerm'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 GHAs requirements.

The SEWI system is based on the performance of a unique, lightweight galvanised steel wire space frame with a 105mm Mineral Fibre insulation core. The vertical panel spanning method was used to span from the good quality concrete in each floor slab to provide a rigid, continuous envelope around the buildings (see diagram below).

#### Detail showing fixing method for high rise vertical panel spanning



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

### Results:

- The SEWI has stabilised the failing infill concrete panels by spanning them from floor slab to floor slab.
- Thermal performance has improved greatly with the U value of the walls dropping from 2.16W/m<sup>2</sup>K to 0.28W/m<sup>2</sup>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.