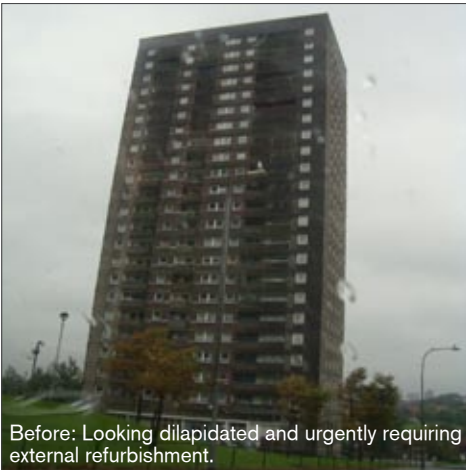


Linkwood High Rises

Linkwood Crescent,
Drumchapel, Glasgow

Sector: Social Housing
High Rise
Refurbishment



Before: Looking dilapidated and urgently requiring external refurbishment.

Client:
Glasgow Housing Association

Building Type:
Concrete Frame
Bellrock Concrete & Brick
Cladding Panels

Project Size:
2 x High Rise Blocks 8443m²

Product:
• 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 two high rise blocks of flats in the Linkwood area of Drumchapel, Glasgow.

Client Requirements:

The flats were constructed using insitu concrete for the frame and then overclad with a combination of unusual Bellrock concrete cladding panels and traditional brick infill. The flats were in a bad state of repair, looking dilapidated and urgently requiring external refurbishment to give them a new lease of life and to improve their thermal performance in order to drive down the heating demand and in turn reduce carbon emissions.

Design Solution:

The design team faced numerous challenges with the facade of the blocks in order to achieve a modern smooth finish which would also have the correct amount of insulation to meet stringent building regulations for thermal performance.



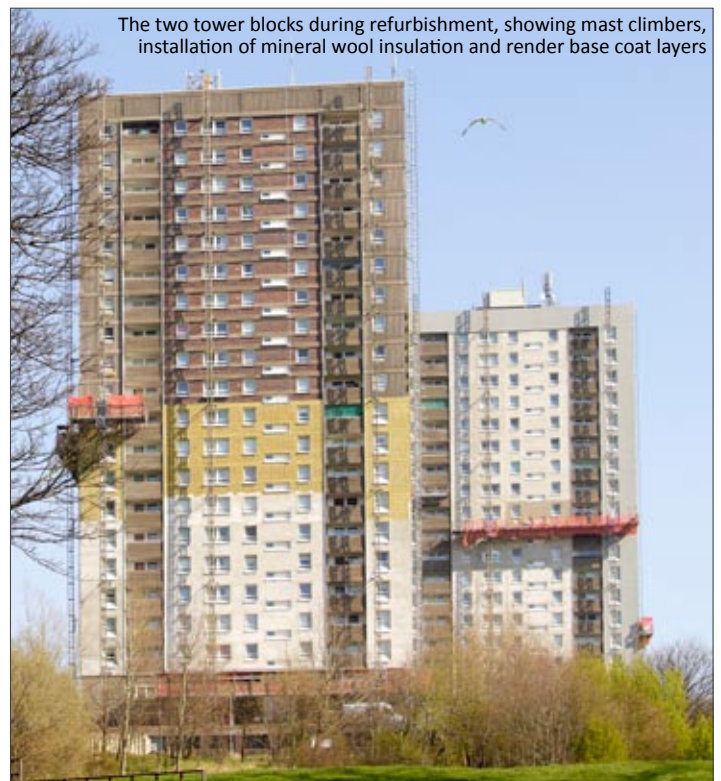
Before: Ribbed concrete cladding panels and areas of brick-cladding with different datums and undulating surfaces.

Each elevation had six different datum levels, with the concrete edge beams protruding the furthest and the face of the brick infill recessed by 155mm (see photo bottom left). Structerm's "High Build" External Wall Insulation (EWI) was specified along with five different thicknesses of high performance Mineral Fibre insulation to overcome the different levels on each elevation.

The Mineral Fibre insulation boards supplied were 50mm, 60mm, 90mm, 100mm and 130mm, these were fixed to the concrete frame and infill panels using specially selected fixings for each area of the buildings. Two layers of 3mm basecoat render with glass fibre reinforcing mesh embedded were then applied. To complete the system the client chose a high performance through coloured Silicone render finish, to provide a modern and fresh look to the buildings.

Results:

- Thermal performance has improved greatly with the U value of the walls dropping from 1.36W/m²K to 0.29W/m²K on the brick panel areas and from 1.13W/m²K to 0.29W/m²K on the concrete panel areas.
- 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 new high performance windows and enclosed balconies has transformed the appearance of the blocks into modern and attractive buildings.



The two tower blocks during refurbishment, showing mast climbers, installation of mineral wool insulation and render base coat layers