



Wauchope House &
Greendykes House
Niddrie, Edinburgh

Sector: Social Housing
High Rise
Refurbishment

Before



After refurbishment



After Refurbishment



Client:
The City of Edinburgh
Council

Building Type:
Cruden High Rise Blocks

Project Size:
2 Blocks 8,871m²

Product:
• Structural External Wall
Insulation & Render
• Dash Aggregate Finish

Project Background:

The City Of Edinburgh Council are going through a programme of upgrading its Social Housing helping to bring them up to Scottish Quality Housing Standards by 2015.

Within their stock the council has numerous high rise blocks built in the 1960's and 70's, two of these blocks were Wauchope House and Greendykes House. Construction of both blocks was carried out by Cruden Ltd in 1966 and contain 86 flats each over 15 storeys.

Problems

The blocks were a cavity construction with concrete block inner wall, 60mm cavity and a brick outer wall with no existing insulation. Continuing fuel price rises and a poor level of thermal performance resulted in the flats being difficult and expensive to heat leading to some residents being in fuel poverty.

Client Requirements:

The council wanted a refurbishment solution that would:

- Improve thermal performance and therefore cut fuel bills, and help raise residents out of fuel poverty.
- Improve the external appearance of the buildings.

Design Solution:

Structherm's unique Structural External Wall Insulation (SEWI) system which is based on the performance of a unique, lightweight wire space frame panel component with a rigid insulation core was specified for the external refurbishment of the blocks as it was able to offer solutions to each of the councils requirements.

The system specified by Structherms design department was for a GR100 panel manufactured with galvanised steel wire and incorporating 80mm of Mineral Wool insulation core. The vertical panel

spanning method was used in conjunction with a reinforced steel channel, resin anchored into the dense concrete floor slabs at each floor level. The panels were fixed to the channels with shear receiver brackets and then secondary fixings installed through the panels into the brick work to provide a rigid, continuous envelope around the blocks.

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

Results:

The thermal performance has improved greatly with the installation of the SEWI system and cavity wall insulation. The U value of the walls has dropped from 1.28W/m²K to 0.21W/m²K exceeding current Scottish Building Regulations. The result is that each flat is easier to heat to a comfortable temperature and retains the heat for much longer therefore the demand for heating and fuel is significantly reduced. This reduced level of energy usage has had a direct impact on helping cut carbon emissions, improve the blocks' carbon footprint and raise residents out of fuel poverty.

This design approach allowed the blocks to be externally clad with a system that could span from floor to floor with the primary fixings being installed into the dense structurally sound concrete floor slabs thus avoiding putting excessive forces onto the weaker brick walls.

The fresh, contemporary design of the buildings along with new bathrooms, kitchens and windows has transformed the blocks into modern and attractive buildings where residents are proud to live.

After refurbishment

