

# Whitecross Low Rise

**Client:** Falkirk Council  
**Approved Installer:** AC Whyte & Co Ltd  
**Building Type:** Cruden non-traditional  
**Project Size:** 20 properties (2,142m<sup>2</sup>)  
**System:** Structural External Wall Insulation  
**Finish:** Dash Aggregate

Social Housing Refurbishment | Whitecross, Falkirk

## REFURBISHMENT OF NON-TRADITIONAL SOCIAL HOUSING CRUDEN PROPERTIES USING STRUCTURAL EXTERNAL WALL INSULATION

### Project Background:

As part of their corporate plan, Falkirk Council has a specific focus on alleviating the causes and affects of poverty and addressing inequalities. Their social housing capital investment fund of £89m includes a proportion for energy efficiency works such as insulation to reduce fuel poverty.

Having used Structherm external wall insulation systems on previous refurbishment projects the council once again specified our Structural External Wall Insulation system for 20 non-traditional Cruden properties in the Whitecross area of Falkirk and appointed AC Whyte & Co Ltd as the specialist installer.

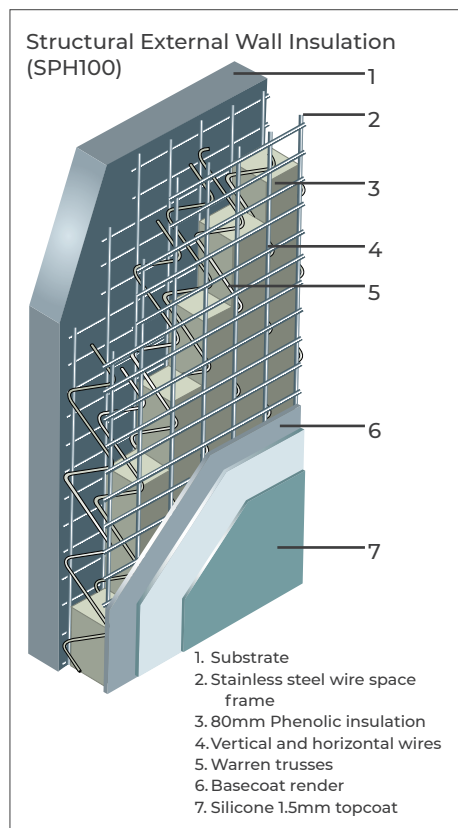
### Problems:

These non-traditional metal framed properties were built in the 1940's using rolled steel channels (RSC), angles, and floor beams to form the main load bearing frame. The external walls were constructed with a 102mm brick skin covered using a process known as harling. A lime based render was applied to the blocks and then while wet pebbles were thrown onto the surface to provide weather protection. A timber frame and sheet of plasterboard were used for the inner leaf and between the frame studs a small amount of glass fibre insulation was installed.

With age the protective render on these properties often crack leading to water ingress. This can cause severe corrosion of the RSC's and corrosion of many other parts of the metal frame. Other problems include bowing of the external concrete block walling and poor thermal performance of 0.77W/m<sup>2</sup>K and high fuel costs for residents.



## UNRIVALLED TECHNICAL SUPPORT AND DESIGN SERVICES WERE PROVIDED AT EVERY STAGE OF THE PROJECT



### Client Requirements:

Falkirk Council wanted a cost effective external refurbishment solution that would:

- Overcome the structural problems faced by these properties.
- Bring the houses up to current Part L Building Regulation standards in relation to thermal efficiency requirements.
- Improve the external appearance of the houses.

### Design Solution:

Falkirk Council appointed AC Whyte & Co Ltd as the specialist installer for this project and specified Struchterm's unique Structural External Wall Insulation (SEWI) system

The SEWI system is based on the performance of a lightweight stainless steel wire space frame with a 80mm Phenolic insulation core. Each SEWI panel measured 1200 x 2400mm and due to their spanning capability were able to

be fixed into the steel frame, without requiring any fixings going into the defective concrete block outer leaf. The panels were fixed to the steel frame using specially selected fixings and washer plates before being mechanically clipped together to provide a rigid, continuous envelope around the houses.

To complete the system Struchterm Fibre Reinforced basecoat render 14-16mm thick was applied followed by 8-10mm of dash receiver and a decorative dashing aggregate.

### Results:

- SEWI has enabled the houses to be insulated without applying any additional loads to the weak outer leaf.
- Thermal performance has improved greatly with the U value of the walls dropping from 0.77W/m2K to 0.22W/m2K.
- The decorative dashing aggregate has revived the facades of the houses.

