

**Pappert**  
Alexandria,  
West Dunbartonshire

**Sector:** Social Housing  
Low Rise  
Refurbishment

Before



After refurbishment



After



**Client:**  
West Dunbartonshire Council  
**Building Type:**  
Crosswall  
**Project Size:**  
203 Properties 11,571m<sup>2</sup>  
**Product:**  
Structural External Wall  
Insulation  
External Wall Insulation  
Dash Aggregate Finish

## Project Background:

West Dunbartonshire Council (WDC) is going through a programme of upgrading its Social Housing helping to bring them up to Scottish Quality Housing Standards by 2015.

Over recent years as part of the programme WDC has been upgrading their large stock of non-traditional Crosswall properties using Structherm systems. The latest phase of 63 properties in the Pappert area of Dunbarton were structurally defective, poorly insulated and extremely expensive to heat.

## Client Requirements:

WDC wanted a cost effective solution for externally refurbishing the properties and one which would:

- Improve thermal performance and therefore cut fuel bills.
- Solve the structural problems associated with Crosswall properties.
- Reduce CO2 emissions.
- Improve the external appearance of the properties.

## Design Solution - Gable Walls:

Structherm's "Heavy Duty" External Wall Insulation (EWI) was chosen for the gable walls. This consisted of a layer of high performance, 50mm thick, PIR insulation boards fixed directly back to the brickwork of the properties using specially selected fixings. Stainless steel expanded reinforcing mesh was then installed with Structherm standard

basecoat render applied over the top to a thickness of 8mm. To complete the system Structherm Dash Receiver was applied in one coat at 8mm thick and then a decorative dash aggregate applied.

## Design Solution - Front & Rear Elevations:

For the front and rear elevations where the properties were structurally inadequate Structherm's unique Structural External Wall Insulation (SEWI) system was specified. The SEWI system is based on the performance of a unique, lightweight galvanised steel wire space frame with a 55mm PIR insulation core which was able to provide structural support to the properties along with increasing thermal performance. To complete the SEWI system a 14-16mm layer of fibre reinforced basecoat render was applied followed by a 6-8mm dash receiver coat before the final dash aggregate was applied. This finished layer provided the buildings with an attractive façade that fully met the client's aesthetic expectations.

## Results:

- Thermal performance has improved greatly with the U value of the walls dropping from 0.51W/m<sup>2</sup>K to 0.24W/m<sup>2</sup>K.
- The carbon footprint has reduced as it now requires less fuel to heat each house to a comfortable temperature.
- The SEWI system has provided the necessary structural support that the properties required.
- The traditional dash aggregate finish has greatly improved the appearance of the properties which previously looked old and tired.

