



Woolaways Low Rise



Client: Rhondda Cynon Taff Homes (RCT Homes)
Registered Installer: Thomas CMS (Holdings) Ltd
Building Type: Woolaway non-traditional
Project Size: 70 properties (8,500m²)
System: Structural External Wall Insulation
Finish: Dash Aggregate

Social Housing Refurbishment | Aberdare, South Wales

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

Project Background:

As part of their ongoing planned maintenance programme Rhondda Cynon Taff Homes (RCT) needed to externally refurbish over 70 non-traditional "Woolaway" precast reinforced concrete properties.

Having used Structherm systems on other non-traditional housing stock RCT once again opted to use our Structural External Wall Insulation system. The project which was split over two sites in Aberdare was awarded to a local contractor Thomas CMS Ltd who undertook specialist training from Structherm to become a registered installer.

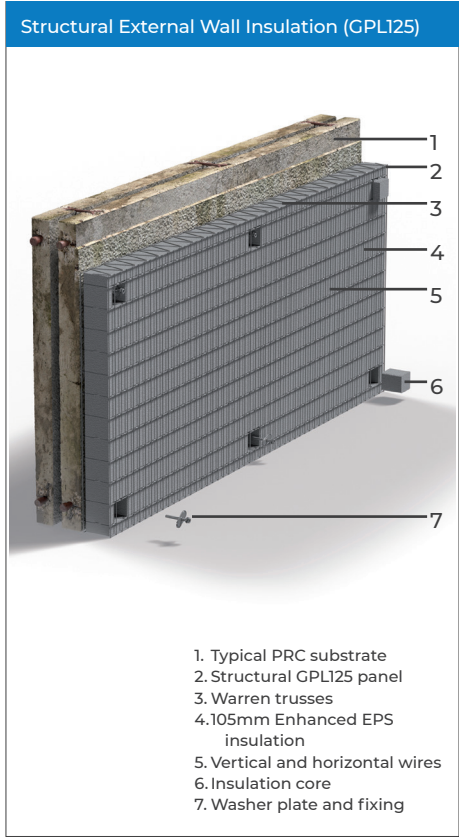
Problems:

The Woolaway house type was designated by the Building Research Establishment in the 1980's as inherently defective due to numerous structural defects. These defects include cracking in the precast concrete columns and precast reinforced concrete (PRC) panels due to high rates of carbonation and low levels of chloride in the concrete which corrodes the rebar and then spalls the concrete (see photo overleaf).

The properties, which were built in the 1940s, were also losing heat due to their lack of insulation, leading to high fuel costs for residents.

A standard External Wall Insulation system was ruled out because it would not have resolved any of the structural problems associated with this property type.

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



Client Requirements:

RCT wanted a cost effective external refurbishment solution that would:

- Overcome the structural defects associated with the failing concrete columns and panels.
- Bring the properties up to current Building Regulations in relation to thermal efficiency requirements.
- Improve the appearance of the properties that were looking tired and outdated.

Design Solution:

Structherm's Structural External Wall Insulation (SEWI) system was specified for the external refurbishment of the properties. The system comprises of a panel manufactured from rigid insulation strips positioned in a mechanically fixed steel wire cage with warren trusses positioned at 100mm centres.

This unique design provides 7 key performance criteria:

- Load transference
- Torsional strength
- Racking resistance
- Thermal performance
- Impact resistance
- High wind resistance
- Fire performance

The GPL125 panel measuring 2.4m x 1.2m was specified which incorporated a 105mm thick Enhanced EPS insulation core.

The panels were fixed to the concrete columns, without requiring any fixings going into the thinner PRC cladding panels. Specially selected fixings and washer plates were used before being mechanically clipped together to provide a rigid, continuous envelope around the houses.

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

Results:

- After localised concrete repairs the SEWI panels were able to span from column to column transferring the load of the new cladding directly into the primary structure preventing any additional loads having to be applied to the existing cladding panels.
- Thermal performance has improved greatly with the U value of the walls dropping from 0.98W/m²K to 0.30W/m²K.
- The traditional finish with subtle window detailing has significantly improved the external appearance of the properties.

