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Greatlands Crescent

North Prospect, Plymouth

Sector: Social Housing
Low Rise
Refurbishment


Dorlonco properties after refurbishment


Dorlonco property before refurbishment


Dorlonco property after refurbishment

Client:
Plymouth Community Homes

Building Type:
Dorlonco

Project Size:
Pilot Scheme

Product:
Structural Insulated Cladding
& Render Finish

Project Background:

Plymouth Community Homes (PCH) was formed in 2009 to manage 15,000 homes in Plymouth and has a budget of £168 million to invest in repairs and improvements in order to bring every home up to the Plymouth Community Homes Standard.

As part of the investment programme PCH is working with Plymouth City Council to deliver an exciting regeneration programme within the North Prospect area of Plymouth. This involves the thermal upgrade of 240 traditional brick properties which are structurally stable, and 40 non-traditional Dorlonco type properties which are structurally defective due to bad corrosion at the base of the steel loadbearing columns.

Client Requirements:

PCH wanted to a cost effective solution to externally refurbish the Dorlonco properties and one that would:

- Solve the structural problems associated with the corrosion
- Create a watertight and thermally efficient building envelope
- Reduce CO_2 emissions and lower residents' fuel consumption
- Improve the external appearance of the houses

Design Solution:

PCH decided to trial Structherm's unique Structural Insulated Cladding system consisting of a 125mm structural panel with Enhanced EPS insulation for the external refurbishment of two Dorlonco properties, before rolling out a full scale programme to the remaining 38 properties. The refurbishment included stripping the outer brick skin and removing the failed cavity wall insulation which had slumped due to water ingress. Then every steel column had its corroded base cut out before a continuous curb stone was laid to form a ring beam base on the newly fitted damp proof membrane. Each column was then fixed using brackets to the curb stone providing the necessary structural support. To complete the refurbishment the structural cladding panels were installed over the columns and then rendered using a high performing Acrylic render.

Results:

- Thermal performance has improved greatly with the U values dropping from 1.80W/m²K to 0.25W/m²K
- The carbon footprint of each house has reduced by virtue of requiring less fuel to heat them to a comfortable temperature. This will have the positive benefit of reducing fuel consumption for residents.
- The aesthetic appearance of the properties has greatly improved as the refurbishment programme also included new roofs, soffits, fascia boards, guttering and canopies.

Dorlonco semi-detached property after refurbishment showing contemporary acrylic finish in cream.

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