



Dawberry Fields Road,
Birmingham

Sector: Social Housing
Low Rise
Refurbishment

Cornish Property Before Refurbishment



Cornish Property After Refurbishment



Cornish Property Before and After
Refurbishment

Client:
Birmingham City Council

Building Type:
Cornish

Project Size:
65 Properties 4000m²

Product:
Structural External Wall
Insulation & Render Finish

Project Background:

Structherm have been working closely with Birmingham City Council on its large scale, five year, housing refurbishment programme. The scheme involves around 68,000 properties of which 12,000 are of non-traditional construction encompassing over 40 different building types.

The council had 64 non-traditional Cornish properties built in the 1950's in the Kings Heath area of Birmingham. Designated as defective by the British Research Establishment (BRE) they urgently required refurbishment.

Challenges:

During the structural survey to two of the properties a boroscope was used to inspect the loadbearing prefabricated reinforced concrete (PRC) columns. No problems with the columns were found but the survey did confirm that the steel tie rods that are supposed to tie each column together did not exist. The lack of tie rods would cause the columns to deteriorate over time and lead to horizontal and vertical cracking. Any external refurbishment solution would be required to remedy this structural defect.

Other challenges included having to deal with the usual problems associated with poor thermal performance such as damp, condensation and water ingress. Finally, the external appearance had to match as closely as possible to the brick facade of the other properties on the street.

Design Solution:

Structherm's unique Structural Insulated Cladding system incorporating 80mm thick Enhanced EPS was chosen for the external refurbishment of the properties as it was the most cost effective solution for the structural defects. The system spanned from column to column, joined together with mesh to provide a rigid, continuous envelope around the properties with real structural integrity and excellent thermal performance.

A 12mm layer of basecoat render was then applied to the system which worked with the panels to provide a high degree of spanning and racking strength.

To complete the system a traditional Macerend brick effect render finish was applied. This two coat specialist system used Pensford Brown render for the mortar layer and Intake Orange render that was matched to the surrounding brick skinned properties for the brick face layer.

Results:

- The Structural Insulated Cladding has eliminated the risk of cracking columns and the structural deficiencies.
- Thermal performance has improved greatly with the U value dropping from 2.06W/m²K to 0.30W/m²K.
- The aesthetic appearance of the properties has greatly improved with the refurbishment programme also including new roofs, soffits, fascias and downpipes as well as the overhaul of the façade.



Cornish Properties After Refurbishment